

The Technology Review

VOL. IX.

OCTOBER, 1907

No. 4

A PLEA FOR THE IMAGINATIVE ELEMENT IN TECHNICAL EDUCATION

There is strong reason for the belief held, with few exceptions, by our ablest university presidents that an institute of technology should be essentially a graduate school, in the same rank with schools of law and of medicine. For many years the best law schools have recruited their students from the graduates of colleges, and some of the leading medical schools have adopted the same principle. It has been felt that no amount of purely technical knowledge can replace the advantages of a broader culture and the better understanding of the affairs of the world which its possession implies. We need not pause to discuss here the relative educational value of science and the humanities, though this subject is touched upon in a later paragraph. Such weighing of one subject against another is not now relevant: we are concerned merely with the fact that students who have spent time enough to acquire a large amount of information of broad range are certain to have the advantage of those who have spent less time in acquiring less information of narrow range.

It is probable that the average member of a technological school is in more danger of a narrow outlook than any other class of students. In a large percentage of cases he has

technology review

Published by MIT

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rejoiced from boyhood in a mechanical turn of mind, which has concentrated his attention on engines and machinery and the splendid achievements of modern engineering. Happy is the boy whose career is thus plainly foreshadowed. For him life is sure to be worth living, and the dangers of idleness may be ignored. But this very interest, in direct proportion to its intensity, is almost certain to lead to a neglect of other opportunities. The absorbing beauties of machine construction and design so completely occupy the boy's mind that they hinder a view of the greater world. He cannot be expected to perceive that a knowledge of the details of his chosen profession should not suffice to satisfy his ambition. He does not yet know that to become a great engineer he should cultivate not merely his acquaintance with the details of construction, but in no less degree his breadth of view and the highest powers of his imagination.

The greatest advances, whether in engineering, in pure science, in art, or in any other field, arise as mental pictures, at first uncertain as to details, but subsequently clear and distinct, requiring only an application of text-book methods to give them tangible form. It is in the conception of the picture, and not simply in the execution of the project it embodies, that the truly great engineer must excel. The mere dreamer never succeeds in bringing the confused and nebulous image to a sharp and definite focus. Lacking a substantial basis of knowledge, or otherwise failing to possess those subtle qualities which the realization of a splendid dream implies, he never gives walls or foundations to his castles in Spain. But practical ability to execute the design can never replace the design itself. The picture must be conceived and made visible to others before the work of construction can begin. Once the design has been transferred to paper and its fundamental principles made clear,

an army of artisans, possessed of the skill required for its execution, can easily be found. It should be the purpose of the Institute to contribute to the world the largest possible proportion of men capable of conceiving great projects and the smallest possible proportion of men whose ambition can be completely satisfied by the work of executing them; and the means adopted to accomplish this end should be such as to improve the work of every graduate, including those who may be unfitted by nature for the greater tasks to which I have referred.

Perhaps it should be remarked at this point that what is ordinarily called invention, as applying particularly to machinery, is not alone considered here. A great engineer is not necessarily a great inventor, in this limited sense of the word. He may depend upon others to furnish the materials, whether perfected machinery or the simple brick or stone, copper or glass, with which he builds. It is for him to group them in such a way as to accomplish an advance, by securing greater economy in the industrial arts, by raising an architectural structure that shall benefit every occupant or casual observer, by facilitating transportation to such a degree as to revolutionize the conditions of daily life.

It would thus seem to be evident that a technological school can by no means afford to underestimate the need of broadening the view and cultivating the imagination of its students. What agencies, we may then ask, would best contribute to this end? It goes without saying that technical education must be the principal work of the school. Is it possible, in view of the heavy demands brought about by the rapid development of engineering, to give all necessary instruction in technical subjects, and also to extend the student's outlook upon the world and to develop his imaginative power?

I believe that three means contributing toward the accomplishment of this result should be considered:—

1. As a probable development of the future, the requirement of at least two years of general college work for entrance.

2. As a partial alternative under existing conditions, the allotment of as much time as can be spared to general studies in the Institute's curriculum, and the creation of new opportunities, outside of the regular work, for developing the social and cultural sides of the student.

3. As essential needs under all circumstances:

(a) Insistence upon the paramount importance of fundamental principles, as distinguished from specific facts and technical details.

(b) The fullest possible recognition and use of the educational value of science, both in its cultural aspects and in the means it affords of developing the reasoning powers and the constructive imagination.

Let us consider these points in the above order:—

1. It may be taken for granted that the progress of engineering will cause more and more difficulty in providing suitable technical instruction in a four years' course. Although I believe this difficulty can be partly met by giving less time to the mere acquirement of knowledge and more to practice in the solution of new problems, it is evidently no simple matter to reconstruct the curriculum on this basis.

The development of the turbine engine, for example, must be recognized in the course of instruction. Its adequate treatment, however, demands time, which can be had only by eliminating other instruction. So with the theory of alternating current machinery, the phenomena of radioactivity, and many other subjects of recent development. All must find place in the curriculum, which accordingly becomes more and more difficult and condensed. The increasing entrance requirements tend to shift the more elemen-

tary mathematical courses from the Institute to the preparatory school, and the same may be said of other subjects. The inevitable tendency is, therefore, for the purely technical courses to crowd out other work. At Sibley College this process has eliminated even modern languages from the curriculum. At the Institute political economy, English literature and composition, history, modern languages, and business law are retained, and successful efforts have been made to provide for much general reading through the adoption of requirements for summer work.

It may be expected, then, that the future will see the best of the technological schools requiring part, at least, of an ordinary college course for entrance. Such a result is earnestly to be desired, in view of the better and broader education rendered possible by such means. The technological schools may then devote themselves to professional studies, though pure science should always play a very important part in their work, and every effort should be made to realize and develop the more truly educational possibilities of the instruction. The rapid increase in the number of college graduates at the Institute, and the establishment of a three years' course for them, leading to an M.S. degree, are significant signs of the times.

2. We are told, however, that the average student is not in a position to spend six or eight years, after leaving the preparatory school, in obtaining an education. Without attempting to question the truth of this assertion, the analogous case of the medical schools seems to indicate that room might now be found for one or two technological schools requiring two years of college work for entrance. Nevertheless, I do not favor the immediate adoption of such a policy by the Institute. Further experience will show whether so radical a departure is essential. For the present

we may consider the ordinary course limited to four years, and inquire whether it is possible to improve it in any considerable degree.

It may be hoped that the successful efforts made by the Faculty to retain a considerable number of general studies will be followed by an attempt to extend the scope of this work. The Institute graduate is in no less need than the Harvard graduate of a knowledge of history, literature, language, and art. The fact that the one may engage in engineering, while the other devotes himself to some other business, should draw no line of distinction between them. The engineer should know the accomplishments, the thoughts, and the ways of the world no less thoroughly than they are known by the broker, the banker, or the dealer in real estate. His work, as we have said, is not confined to the application of certain formulæ to the solution of engineering problems. It occupies, or should occupy, a broader field, in which an understanding of the impelling motives and the probable actions, under given conditions, of other men is one of the first essentials of success.

The time will inevitably come when the mass of engineering knowledge which must be taught in some form in a four years' course will be double or treble what it is to-day. What can be done then? Will it not be possible, through the elimination of the less important details and greater concentration of attention on fundamental principles, to overcome the difficulty? If so, it seems reasonable to suppose that something of the sort could be accomplished now, leaving time for the inclusion of more general studies in the curriculum and for more practice in the solution of problems new to the student, by which his creative and reasoning faculties would be developed.

3. The saving of time should not be the only result of

such reconstruction. There is reason to believe that the average student, at the present day, may often fail "to see the wood for the trees." His mind is not able to distinguish with sufficient clearness between fact and principle. A fact may be capable of attractive and forcible illustration, easily appealing to the mind. It may perhaps afford a most striking example of a general law, but the uninviting aspect of the latter, when reduced to a formula, may repel rather than attract. The law is soon forgotten, while the illustration of its application to a particular case is kept in mind.

But how, it may be asked, are we to escape the difficulty into which we have fallen? It is held, on the one hand, that double advantage may result from even greater attention than is now given to fundamental principles. It is admitted, on the other, that such principles must, in the nature of things, be taught and rendered attractive through just such illustrations as are now so effectively employed. Standing between the horns of this dilemma, we can only appeal for assistance to those who have demonstrated their ability in building up the Institute courses. In asking of them whether the last word has been said on this subject, we may confidently expect a negative reply, for the frequent revision to which the courses are subjected demonstrates a determination to keep abreast of the times. It may be hoped that this reference to the question will not be taken as a trivial attempt at criticism, since in their review of the year's work the members of the Faculty would probably have in mind the query here proposed.

It is undoubtedly true that no amount of general study and no method of teaching science can replace the advantages of personal experience. On the other hand, it must be admitted that, by adopting the best means to acquaint the student with the broader aspects of science, results may be

accomplished which might otherwise be long delayed. The catalogue of the Institute rightly states, in opening its discussion of the courses of instruction, that the "fundamental elements in the curriculum of the school are mathematics, chemistry, and physics." It adds, further, "Instruction in technical methods is subordinated to the question of principles, and these principles are studied with the predominant purpose of exercising the powers and training the faculties." It would be difficult to prepare a more admirable statement of the purposes of the school, and this may seem to render any recommendations in this direction superfluous. As in the case of general studies, however, where these remarks may do no more than second the efforts already made by the Faculty, I may be permitted to emphasize the importance of extending the application of a principle already recognized and of adopting any practicable means of widening the outlook of the student.

In remarking upon the desirability of cultivating the scientific imagination and of developing that breadth of view which is most effectively acquired through reflection and experience, I have had in mind the fact that the most fertile and inspiring of all scientific theories has never, it would appear, received adequate recognition in the curriculum of educational institutions. I refer to the theory of evolution which, when rightly appreciated in its broadest scope, is perhaps better competent to awaken the imaginative powers and to develop an understanding of the greatest aims of science than any other single conception. Many institutions, the Institute among them, give a limited number of undergraduates courses involving the study of evolution in one or more of its innumerable phases. The opportunity remains, however, to present a general course of lectures dealing with evolution as applied to the various branches of science, and

to require that it be attended by all students. Such a course, if accompanied by collateral reading and illustrated by a small museum of carefully selected objects, would do more, in my opinion, to accomplish the purpose in mind than any other single agency.

The natural tendency of the student, from which few escape, is to regard science as partitioned off into compartments, each more or less sufficient unto itself. Every effort should be made to break down this tendency, in order that it may become clear that science should be considered as a whole, particularly if its fullest educational value is to be realized. The theory of evolution, on account of its endless range and its importance in almost every branch of science, may serve as the best means of illustrating the arbitrary nature of the boundary lines that have been drawn. Even in the conception of evolution itself there is a natural but undesirable inclination to distinguish, for example, between organic and inorganic evolution, and to confine general courses of lectures to one or the other branch. What the student needs, if this view of the subject be correct, is some such picture of the general operation of the evolutionary principle as Spencer has outlined, but so modified as to deal with the advances of recent years, and illustrated by the best and most striking examples that can be brought together.

Such a course of lectures should be arranged on a chronological basis, and would therefore open with a popular account of recent investigations on the origin and development of the heavenly bodies. The remarkable results of recent astronomical photography afford the richest of illustrative material for such lectures as these. Nothing could be more suggestive than the magnificent whirlpools of the great spiral nebulae, which are now considered as the source from which

solar and stellar systems are developed. After seeing for himself the forms of these star sources, the student would listen with interest to an account of Laplace's nebular hypothesis and the more recent views which promise to supersede it. Then would follow a description of the sun as a typical star, and a sketch of stellar growth and development based upon modern inquiries. Here the intimate relationship between this field of astronomical research and the laboratory studies of the physicist and chemist would become apparent. For it is possible to solve physical and chemical problems through observations of the stars, as well as to solve solar and stellar problems through experiments in the laboratory. It would be easy, therefore, to introduce at this point such a sketch of modern physical and chemical conceptions as would bring home to the student the fundamental character of these branches of science, their relationship to other branches, and their remarkable development in recent years.

The transition to the next phase of the evolutionary subject would be so natural as to be imperceptible. The formation and development of the earth and of its surface phenomena, which it is the function of the geophysicist and the geologist to study, involve another application of physical and chemical principles. At the present time the processes by which the rocks of the earth's crust were formed are being imitated in the laboratory, just as solar and stellar conditions are being reproduced, in minor degree, by laboratory experiments designed for the interpretation of astronomical observations. The picture of geological phenomena would be no less striking. What better mode of developing the scientific imagination could be found than that afforded by the conception of the early history of the earth? The rise and fall of mountains and continents; the changing area of the sea and the story of sedimentary deposits revealed in the stratified rocks;

the growth of glaciers and the part they have played in former ages; the changes of climate; and, finally, the mysterious origin and development of plant and animal life, as first illustrated in the fossils,—such a picture as this, if viewed as a part of the greater picture which represents evolution as a whole, should stimulate the student to further inquiries.

Having advanced so far, he would eagerly await the account of the origin of species which can be given to such great advantage in the light of recent research. On the one hand there would be the evidence afforded by the countless specimens preserved in the rocks from former times, best typified perhaps in the case of the horse, whose many-toed ancestors can now be seen in an almost unbroken series, thanks to the energy and skill of recent investigators. On the other hand, even more attractive through the promise they hold out of future advances, the laboratory studies of experimental evolution, now pursued by both botanists and zoölogists, would receive consideration. The splendid conceptions of Darwin and their brilliant exposition by Huxley; the clash of rival hypotheses which has since followed; the part played by natural selection, on the one hand, and by mutation, on the other,—these and many other aspects of evolution, from the botanical and zoölogical standpoint, are interesting in their popular appeal and of the highest value in developing breadth of view. In all of these lectures the personal side should not be forgotten. What better stimulus could be offered the student than that arising from an acquaintance with Darwin, in the quiet surroundings of his home, removed from the centres of intellectual activity, hampered by constant illness, and yet pursuing long and patiently those simple yet remarkable researches which formed the basis of “*The Origin of Species*”? And what a splendid contrast is afforded by the striking successes of

Huxley, won in the midst of the turmoil of London, under the constant pressure of innumerable public duties! Here is an illustration of the most convincing kind that a scientific man is not of necessity a recluse, and of the more important fact that his work touches upon the concerns of the everyday world.

I might go on to develop, in greater detail and in clearer outline, my notion of the character which such a course of lectures should assume. Obviously, its limit need not be placed at the boundaries of organic evolution. It is much for the student to form a mental picture of the unity of science and of the orderly progress which culminates in the development of man. But, having pursued to this point the evolutionary idea, he might wish to follow it further. The origin and growth of society, the course of history, the crude beginnings and the subsequent refinements of language,—in short, the source and progress of every form of material and intellectual activity are never to be rightly perceived unless in the clear light which the theory of evolution radiates.

I believe that this single example of the many agencies that might lead to the expansion of the student's intellectual horizon is one worthy of adoption. If science is to be regarded as not inferior to the humanities in its educational possibilities, it is because it deals with the largest and most fruitful conceptions, of which evolution is perhaps the greatest. While I am not of those who believe that science alone is competent to supply all of the student's needs or to take the place of the humanities in a well-rounded education, I would nevertheless maintain that, when rightly taught, it may do far more than merely to instruct the student as to the mechanism and the detailed mode of operation of the processes of nature.

It is unnecessary to remark on the uselessness or even

danger of encouraging the growth of the imaginative power unless the power of reason and the capacity to carry projects into practical effect are developed in equal proportion. There is no occasion to fear that the practical side will suffer, for it is, and must always remain, the most conspicuous part of the Institute's work. Nor is there any chance that the imagination in such surroundings will outgrow reasonable bounds. It is nevertheless well to remember that no amount of imagination can replace a lack of common sense. Moreover, the necessity of discriminating between projects that are likely to work out well in practice and those that are merely ingenious, while devoid of genuine merit, must always be borne upon the student's attention. Sound training and severe practical experience must furnish the required criteria.

I have devoted so much attention to this plea for the needs of the undeveloped imaginative faculty that I may be suspected of underestimating the predominant importance of the Institute's technical work. Far from believing, however, that the school should deal with pure science to the detriment of applied science or with the humanities in such a manner as to stand in the way of the effective training of the engineer, I would support a movement which might extend still further the scope and the importance of the technical departments. The rapid development and brilliant success of the Research Laboratory of Physical Chemistry are well known. I believe not only in the establishment of such a laboratory in connection with the department of physics, but also in those departments which are more directly concerned with industrial progress. The recent suggestion of a laboratory of industrial chemistry, in which investigations bearing upon the needs so constantly encountered in the application of chemistry to the arts could be conducted, should receive careful consideration. The marked success already achieved

by the Sanitary Research Laboratory and Sewage Experiment Station illustrates the possibilities of such a case. In engineering as well there is room for similar developments. It would seem that the plans already projected for graduate work in engineering should prove of great importance in the future development of the Institute.

It is pleasant to picture the possibilities that seem to lie so near at hand. Removed to another site, with a group of buildings expressive of the broadened scope of the new Institute and so attractive architecturally as to impress the student in his daily round, the school would be far better able than at present to compete with its powerful rivals. The provision, wherever feasible, of a separate building for each department, in which the fundamental purposes of the department might find full expression; the emphasis placed on the facilities afforded for the broadest possible education and the greatly increased opportunities for graduate and research work; the maintenance of the closest relations with manufacturing and industrial interests; the correlation, so far as possible, of all the researches carried on in the Institute, by instructors and students, with reference to their bearing upon large investigations of general importance; the formation of small but carefully stocked synoptic museums illustrating, on the one hand, the work of the various departments and, on the other, a course of lectures on evolution such as has been outlined; and, finally, the improvement of the student's daily life and associations by such agencies as will be afforded by the Walker Memorial Building,—by these means, and by others of like character, the Institute should be enabled to maintain its high reputation and to develop in such a manner as to satisfy the best ambitions of the alumni.

The suggestions offered in this paper may be summarized as follows:—

1. The need of greater breadth of view on the part of technical school graduates is likely to lead, in the best institutions, to the requirement of at least two years of general college work for entrance.

2. At present, on the basis of the existing entrance requirements and a four years' course, the policy of providing for more general studies and of developing the student on the social and cultural sides should be continued and extended.

3. The efforts which are being made by various members of the Faculty to lay special stress on the importance of fundamental principles should receive hearty encouragement.

4. The fullest possible advantage should be taken of the educational value of science. A course of lectures on evolution is recommended as one of the most promising means of broadening the student's conception of science and of stimulating his imagination.

GEORGE E. HALE, '90.

GEORGE WIGGLESWORTH

TREASURER OF THE INSTITUTE FROM MARCH, 1891, TO
OCTOBER, 1907

The Institute of Technology has been especially fortunate in the men who have been willing to serve her in the difficult and highly important office of Treasurer. In her forty-two years of existence she has had only five such officers, and they have all been notable men,—Charles H. Dalton, William Endicott, John Cummings, William Lewis Tappan, Jr., and George Wigglesworth.

Each of them possessed some special personal quality or connection that made him peculiarly valuable to the up-building of the Institute; and all have been alike in their extraordinarily unselfish devotion to the Institute and to the problems of its financial maintenance. To make comparisons among them would be as difficult as it would be invidious; but it is no disparagement to his predecessors to say that in devotion, in conscientious study of the needs of the Institute, in zealous care for its property, and in personal generosity, no treasurer has surpassed Mr. Wigglesworth, whose resignation has just taken effect.

Upon the withdrawal of Mr. Tappan, Mr. Wigglesworth in March, 1891, was chosen to succeed him, was elected in the same month a member of the Corporation, and has served continuously as Trustee, as Treasurer, and *ex-officio* as a member of the Executive Committee, during more than sixteen years. He is a member of a distinguished family of Boston merchants, is a Harvard graduate of the class of '74, and all his business life has been honorably conspicuous as a trustee or director of many important estates and enter-

prises. He brought, therefore, to the office of Treasurer an established reputation in financial matters, long experience in the handling of trust funds, and the absolute confidence of the entire community.

In the years during which he has held office the property of the Institute has trebled in value, the number of students has increased very materially, and the problems with which an institution of applied science has to concern itself have grown greatly in complexity. To financial questions Mr. Wigglesworth has given all the strength of his sound judgment and wide knowledge of securities, and he has obtained, with the advice of the Committee on Finance, every cent of income for the college that it has been possible to secure. To the solution of the various other problems, moreover, with which, as a member of the Executive Committee, Mr. Wigglesworth has been confronted, he has given himself with unflagging zeal, conscientiousness, and self-forgetfulness. During his administration of the office of Treasurer, many very serious questions of policy have arisen and many important decisions regarding the choice of professors and other officers have had to be made.

It is deeply to be regretted that the increasing pressure of his own affairs must deprive the Institute of his continued services as Treasurer. Happily, however, it is not to be deprived of his counsel, since he remains a member of the Corporation.

It would be unbecoming, as it would be unwelcome to Mr. Wigglesworth, to refer to that more personal side which has so deeply endeared him to every one at the Institute fortunate enough to be brought in contact with him. His unfailing courtesy, his inexhaustible patience, his unhesitating willingness to place himself and his resources at the service of any sound project for the development of the school, and his very

personal and intimate interest in the members of the instructing staff, the undergraduate body, and the alumni, have developed in the hearts of Institute men a fund of grateful devotion which, it is to be hoped, may be some compensation for the long years of service which he has so freely given.

The Institute of Technology is too large a force to suffer irretrievably through the loss of any individual, however eminent. But that it has become so important a force is due in a greater degree than any one can possibly measure to the fact that during sixteen of its most important years of development it has had as its chief financial officer and as one of its leading councillors such a rare man as is George Wigglesworth.

THE NEW TREASURER

FRANCIS RUSSELL HART, '89

At a regular meeting of the Corporation, on October 9, Mr. Francis Russell Hart was elected Treasurer of the Institute, to succeed Mr. George Wigglesworth, whose greatly regretted resignation took effect on October 1.

Mr. Hart was born at New Bedford, Mass., Jan. 16, 1868. He received his preliminary education at the Friends' Academy, New Bedford, and entered the Institute in the fall of 1885. He pursued a regular course in electrical engineering until within a few months of graduation, when illness made it impossible for him to complete his thesis work and to secure a degree. While an undergraduate, he was editor-in-chief of the *Technology Quarterly*, established by the students and subsequently taken over by the Society of Arts, and was president of the Photographic Society.

During the four years immediately following his leaving the Institute, Mr. Hart did engineering work of various kinds in the West Indies and in the United States. In 1893 he was made general manager of the Cartagena Terminal and Improvement company, Ltd., and of the Cartagena-Magdalena Railway Company, with headquarters at Cartagena, Colombia, S.A. In the following year he became vice-president, as well as general manager, of the same companies, and in 1895 he was made president, with headquarters at Boston. Since 1896 he has been also vice-president of the Old Colony Trust Company.

Mr. Hart has presented various papers before the Society of Arts, and is a fellow of the Royal Geographical Society and a member of other learned societies. He lives at Milton, Mass., where he is active in public affairs, being chairman

of the Board of Sewer Commissioners, a trustee of the savings-bank, a trustee of Milton Academy, etc.

In addition to the positions already noted, Mr. Hart is president of the Lowell Electric Light Corporation, vice-president of the Northern Railway Company of Costa Rica, and director or trustee in numerous other public service and private corporations.

THE ACTING PRESIDENT

ARTHUR AMOS NOYES, '86

Professor Noyes, whose appointment as Acting President by the Executive Committee was noted in the July REVIEW was confirmed in that office at the meeting of the Corporation on October 9. He was born in Newburyport, Mass., Sept. 13, 1866, and was graduated from the Institute, Bachelor of Science in 1886 and Master of Science in 1887. In 1890 he took a Ph.D. at Leipzig, and, excepting for the two years' absence necessary to secure this degree, has been on the Instructing Staff at the Institute for twenty years. He has been a member of the Faculty, in the Department of Chemistry, since 1894.

In 1903 Dr. Noyes was made Director of the Research Laboratory of Physical Chemistry, to the support of which he has been a generous contributor; and under his direction fellows of this laboratory have made notable contributions in the field of Physico-Chemistry. In 1906 he was elected Chairman of the Faculty.

Professor Noyes has published several volumes, as well as numerous papers on original researches in theoretical and organic chemistry. For the present he has given up all teaching work, excepting that connected with his position as Director of the Research Laboratory, and is devoting himself to the many problems of administration.

GENERAL INSTITUTE NEWS

THE CORPORATION

A regular meeting of the Corporation was held at the Institute on the afternoon of Oct. 9, 1907, Acting President Noyes being in the chair. Professor Noyes's appointment by the Executive Committee as Acting President was confirmed. The resignation of Mr. George Wigglesworth as Treasurer was accepted with great regret; and Mr. Francis R. Hart was elected Treasurer to succeed him. The following resolutions were presented by Mr. Munroe, and it was voted that they be spread upon the records:—

In accepting the resignation as Treasurer of George Wigglesworth, Esq., the Corporation of the Massachusetts Institute of Technology desire to place upon record their high appreciation of and their profound gratitude for his devoted services, which have extended from March, 1891 to the present date.

During this period of more than sixteen years he has freely given to the Institute not only a large measure of his time and energy, but also the fruits of his sound judgment in monetary affairs and of his rare experience in positions of trust. To the trying and perplexing task of handling inadequate and uncertain resources he has brought unflagging skill, wisdom, resourcefulness, and impartiality.

Moreover, as a member, *ex officio*, of the Executive Committee of the Corporation, he has devoted fully as much time, thought, and study to questions of educational policy as to those of finance; and in dealing with all these problems, as well as with those of money, he has shown a thoroughness, a patience, a judicial temper, and an unflagging courtesy which will make his services to the Institute always memorable.

Mr. Frederick W. Wood, '77, was elected a member of the Executive Committee to succeed himself. Dr. Francis H. Williams, having resigned the Secretaryship of the Corporation after many years of devoted service, the Nominating Committee brought in

the name of Mr. James P. Munroe, who was elected to succeed him. The Nominating Committee presented also various changes in the Visiting and other committees, which were adopted. The following appointments by the Executive Committee were confirmed:—

Promotions.—Harrison W. Smith, Associate Professor of Electrical Engineering; George E. Russell, Assistant Professor of Civil Engineering; Miles S. Sherrill, Assistant Professor of Theoretical Chemistry; Royall D. Bradbury, Instructor in Civil Engineering; Rufus C. Reed, Instructor in Mining Engineering and Metallurgy.

Changes of Title.—Raymond Haskell, Ph.D., and Herbert Thomas Kalmus, Ph.D., Instructors in Physics; Gilbert Newton Lewis, Ph.D., Acting Director of Research Laboratory of Physical Chemistry; Hermann William Mahr, Research Assistant in Technical Chemistry; Ellwood Barker Spear, B.A., Instructor in Analytical Chemistry.

New Appointments.—Edward Everett Bugbee, S.B., Assistant Professor Assaying; Lewis Eugene Moore, C.E., Assistant Professor Civil Engineering; Hubert de Chamberay, B.S., and Johannes Waldemar Rabe, A.B., Instructors Modern Languages; Charles Everett Allen, S.B., Henry Bissell Alvord, S.B., James Madison Barker, S.B., Raymond Francis Conron, S.B., Allan Reginald Cullimore, S.B., James Ernest Garratt, S.B., Hudson Bridge Hastings, S.B., Clarence Decatur Howe, S.B., Assistants Civil Engineering; William Walter Bigelow, S.B., Charles Albert Eaton, S.B., Robert Sherman Gardner, S.B., Kenneth Møller, A.B., S.B., Bryant Nichols, S.B., Elliot Williams Taylor, B.S., John Joseph Thomas, S.B., Assistants Mechanical Engineering; Frederick A. Grant, and Angelo Tilton Heywood, S.B., Assistants Mining Engineering; George Brinton Thomas, M.E., Assistant Electrical Engineering; Carleton B. Nickerson, A.B., A.M., and William Walker Kennedy, S.B., Assistants Inorganic Chemistry; Walter Brayton Gonder, S.B., and Octavus Libbey Peabody, S.B., Assistants Analytical Chemistry; Roger David Gale, S.B., Assistant Theoretical Chemistry; Evie James Edwards, B.S., and Edmund Hincks Squire, S.B., Assistants Physics; Charles Horace Clapp, S.B., Assistant Geology; John Johnston, Ph.D., and Carl von Ende, Ph.D., Research Associates

Physical Chemistry; Roger David Gale, S.B., Research Assistant Physical Chemistry; Richard George Woodbridge, Jr., S.B., Research Assistant Organic Chemistry.

During the morning of October 9, upon invitation of Acting President Noyes, a large number of members of the Corporation, together with certain representatives of the Faculty, met at the President's office to discuss informally various important questions now before the Institute. Professor Noyes outlined the several problems, and there followed a long and interesting debate, mainly upon the question of site.

NEW STUDENTS

The total number of students who are enrolled at the Institute after the end of the first week this year is 17 larger than the number last year. This year 1,390 have registered as compared with 1,373 last year. The numbers for the three years previous to that are 1,429, 1,546, and 1,532.

Of the 1,400 students registered this year, somewhat over 500 are new students, and of these 500 about 325 entered the first-year class, the majority of these having taken entrance examinations. The number of students coming to the Institute from other colleges is greater this year than ever before, and apparently those who have come after having spent only two years at other colleges is larger this year than previously. Students previously coming to us from colleges have entered to the greater extent the third year, while to a less extent the second and fourth years.

The new students this year come from almost all the United States. Only five are not represented: namely, Delaware, Louisiana, North Dakota, Idaho, and Wyoming. Seventeen foreign countries are also represented by this new delegation.

The usual interest has been taken in the incoming class, and already it has been entertained by the Y. M. C. A. and dined by the *Tech* at the Union. At these meetings great enthusiasm and unity of spirit have been shown.

DEPARTMENT NOTES

CIVIL ENGINEERING

Mr. L. E. Moore, Instructor in Mechanics and the Strength of Materials at the University of Illinois, has been appointed Assistant Professor of Civil Engineering, to take the place of Professor McKibben.

After graduating from the Department of Mechanical Engineering at the University of Wisconsin, Mr. Moore studied Structural Engineering at the Institute, and after leaving was employed for some time by the Phoenix Bridge Company. Since then he has been at the University of Wisconsin and at the University of Illinois. Mr. Moore has during the past summer been employed upon the work of abolishing grade crossings in Chicago.

Mr. R. D. Bradbury, who has been Assistant in Civil Engineering, has been promoted to the grade of Instructor, and will assist Professor Moore in the work of the fourth year.

Mr. George E. Russell has been promoted to be Assistant Professor of Civil Engineering. After graduating in 1900, Mr. Russell was Assistant here for a year. After this he was employed by the American Car Foundry Company for a number of years. He left the employ of that corporation to teach at Cornell University, and came here as Instructor two years ago.

MECHANICAL ENGINEERING

The modifications in the course, recently adopted by the Faculty, will come into operation with the second-year's class during the present school year.

Of the time gained by dropping one year of language, sixty hours have been added to that given to English Literature and History, while the remainder has been used mainly to increase that given to Applied Mechanics and to Steam Engineering. Moreover, Power Plant Design has been added, and the time given to electrical subjects has been increased.

These changes became necessary on account of the modern developments in engineering practice.

The Superheater has been installed, and will furnish the means for studying questions regarding superheated steam on a practical scale.

A five hundred K. W. Westinghouse Parsons steam turbine, fitted with a hydraulic brake, has been ordered, and will be installed during the second term of 1907-08.

It will furnish the means of studying experimentally and on a practical scale many problems relating to this prime mover, which has become such an important factor in engineering.

The price was brought within our reach through the kindness of the Westinghouse Machine Company, who made us a liberal donation.

A twenty-inch centrifugal machine and a thirty-six-inch hydro-extractor have been added for the purpose of studying experimentally the laws of running balance with high-speed machinery.

Professor Lanza has recently been in Jamestown, serving as a member of the Jury of Awards of the Exposition.

MINING AND METALLURGY

Professor Richard W. Lodge has resigned his position as Assistant Professor of Mining Engineering and Metallurgy after a period of long and faithful service, beginning in September, 1888. He carries with him the thanks of the department for service rendered and best wishes for many years of interesting professional career. He has been invited to make the department his headquarters and to have his desk there. Mr. E. E. Bugbee, class of 1900, has been appointed to the position. Professor Bugbee has had charge of similar work at the Iowa State College and the University of Washington in Seattle. He has been in the service of the United States Geological Survey during the summer. He will therefore bring to the school much outside experience for the benefit of the course.

The demand for graduates in this department has been unprecedented, not only for mines, mills, and furnaces, but for schools of mining. The department has found difficulty in securing the

necessary assistants. Mr. R. C. Reed has returned for another year to help on the work.

GEOLOGY.

Professor Jaggar, of the Department of Geology, returned for the opening of the term after a very successful journey to the Aleutian Islands. It is hoped to have an extended account of the expedition in a later issue of the REVIEW.

THE UNDERGRADUATES

THE OPENING

The regular session for 1907-08 began on October 2 with the usual somewhat complicated process of registration. At one o'clock Huntington Hall was filled with students to listen to the annual greeting from the Faculty, given by Acting President Noyes.

On Friday evening the Technology Y. M. C. A. gave a reception at the Union to the Freshman Class, which was very largely attended. President Reid, '08, introduced the speakers, who were Dean Burton; Captain Orr, '08, of the track team; Hoole, '08, editor-in-chief of the *Tech*; Vonnegut, '08, for the Tech Show; and Secretary Brock, of the Y. M. C. A.

On the following Saturday evening the *Tech* gave its annual dinner to the Freshmen at the Union, Mr. H. W. Hoole presiding. Over one hundred and fifty were in attendance, and the speakers were Dean Burton; Bursar Rand; John S. Tobin, manager of the track team; Coach Kanaly; Captain Loring, of the fencing team; Mr. Humphreys, Registrar of the Institute; I. W. Litchfield, '85; and J. P. Munroe, '82. At both the Y. M. C. A. Reception and the *Tech* Dinner the Freshmen were initiated into the singing of the standard Tech songs, which were given with much spirit.

THE CLASSES

1909.—The class, temporarily dispersed during the summer, have not, however, lost their feeling of solidarity, but have been diligently preparing the material for "Technique, 1909," which they hope to make into a book worthy of its predecessors.

1910.—The first class meeting was held Saturday noon, October 5, with a large attendance. The following were elected: William D. Everett, manager of the football team; P. D. Terry, assist-

ant manager of the football team; C. C. Dudley, manager of the tug-of-war team; B. Reynolds, manager of the track team; and H. D. Billings, baseball manager. Harold C. Manson, at the meeting of the football team, was elected captain. It was the sense of the meeting that the Sophomores should not molest the Freshmen after the *Tech* Dinner. As a result, the annual cheering of the Freshmen on Rogers steps on Saturday evening was not interfered with.

1911.—The class held its first meeting on October 2. President Moses, of the Junior Class, welcomed the men, and there were various speeches from '09 men regarding Field Day. The election resulted as follows: chairman, G. A. Cowee, of Andover; secretary, Stamford, of Polytechnic Preparatory; treasurer, Cushman, of M. A. H. S.; football manager, Odell of M. A. H. S.; track manager, Lloyd Cooley, Brookline High School; tug-of-war manager, Kimball, of Salt Lake City High School.

ELECTRICAL ENGINEERING SOCIETY

The Electrical Engineering Society opened its year with a large and enthusiastic meeting at the Union, October 11. Professor Jackson was the first speaker of the evening. He indorsed the aims of the society, and urged the men to attend its meetings and become mutually acquainted. He next spoke of the attitude the men ought to assume toward any speaker whom they might hear at any time, suggesting that they should consider him with regard to his own specialty and how he had attained his prominence.

Professor Harrison W. Smith spoke to the men of the value of a knowledge of human nature.

THE TECH SHOW

The Tech Show management for the year 1907-08 is as follows: general manager, Frederick A. Dewey, '09; business manager, Curtis C. Webb, '10; stage manager, G. A. Joslin, '09; assistant

stage manager, R. Goodwin, '10; assistant advertising manager, R. Leavens, '10.

Some changes will probably be made in the management, and there are five places to be filled.

ATHLETICS

THE NEW COACH

Frank M. Kanaly, the well-known distance runner, has been engaged by the Athletic Advisory Council to act as trainer for the ensuing season.

He was track coach at Noble and Greenough for two years, at Colby College for three, and also trained the Tufts team for two seasons.

Mr. Kanaly has given a great deal of attention to cross-country work, and intends to make a specialty of it this year. He won the New England interscholastic one-mile championship in 1900, and the same year he won the ten-mile cross-country championship of New England, breaking a record which had stood for years against the efforts of the best runners of the country. At the Pan-American Exposition he won the A. A. U. five-mile championship and the national one-mile championship.

FENCING

Coach Fournon, of the fencing team, has started a fencing club for Tech men, to be located at 22 St. Botolph Street. The membership will cost \$5 a month, and this price will include instruction to beginners. Shower-baths and club-rooms for members will be provided.

PHYSICAL EXAMINATION OF FRESHMEN

An important change has been made in the Department of Physical Training in requiring every first-year student to take a physical examination. The object of the Institute in requiring this is to

give every man an idea of his own physical condition. Those who are markedly deficient will be so notified, and will be advised for their own welfare to take some form of exercise. There will be nothing compulsory in this action, it merely being desired to help the men to help themselves.

The examination, which is a very thorough one, will consist of the following tests and measurements: weight, height, girth of head, neck, chest, normal and inflated, ninth rib, normal and inflated, waist, hips, thighs, calves, upper arms and fore arms; depth of chest, girth of abdomen, breadth of shoulder, stretch of arms, strength and capacity of lungs, strength of back, legs, upper arms and fore arms.

The examinations will be made by the gymnasium instructor, Mr. Winfield Towne, at the gymnasium.

THE GRADUATES

CINCINNATI M. I. T. CLUB

The Cincinnati M. I. T. Club has suffered a loss during the past summer by the death of one of its members, Dr. Thomas Evans, who died at Cincinnati, Ohio, on June 28, 1907. Although he was never a student at the Institute, he had taught there for a short time, and was therefore counted as one of our members. His keen interest in Institute affairs and his wide acquaintance with Tech men always made his presence at our local meetings a distinct pleasure to all present. In local scientific circles, where he has always been active, his death will be felt by all of his former associates.

J. W. ELLMS, '93, *Secretary*,
East Court and Martin Streets, Cincinnati, Ohio.

TECHNOLOGY CLUB OF NORTHERN OHIO

Members are getting together informally at 12.30 P.M. every Saturday for lunch at the Bismarck. Cordial invitation to participate is extended to any Tech man, whether graduate or not, who may happen to be in Cleveland temporarily.

SIDNEY Y. BALL, '03, *Secretary*,
Ball Building, Cleveland, Ohio.

TECHNOLOGY CLUB OF THE SOUTH

A reunion of the graduates of the Massachusetts Institute of Technology was held on Thursday evening, May 30, at West End, New Orleans. Dinner was served by Tranchina, the table being decorated with the college colors. Mr. Albert Godchaux was elected toastmaster, and speeches, taking the form of reminiscences, were heard.

It was decided to form a permanent organization under the name of "Technology Club of the South" and to hold quarterly meetings, Mr. Allison Owen being elected president, and Mr. F. W. Crosby secretary and treasurer. Those present were: P. H. Babcock, '00; Asa J. Briggs, '05; F. W. Crosby, '90; Albert Godchaux, '92; Jules Godchaux, '92; Allison Owen, '93; John L. Porter, '00; David Schwartz, '97; Joseph Sears, '98; Walter G. Zimmermann, '98.

Invited as honorary guests were A. M. Locket, George G. Earl, chief engineer of Water Board, Benjamin Willard, of the General Electric Company, and J. J. Brown.

F. W. CROSBY, '90, *Secretary*,
706 Morris Building, New Orleans, La.

THE TECHNOLOGY CLUB

On the ninth evening of the season, April 17, Mr. James P. Munroe gave a smoke talk at the club on "The Heart of the United States." He described the peculiar development which has taken place in the people of the Middle West during the rapid growth of that part of the United States, and he pointed out how this development, centred in the State of Illinois, has a preponderant effect on the ideals of the whole United States.

On April 30, a ladies' night, Mr. Harris Kennedy, M.D., gave an interesting talk on "Glimpses of Rural Japan." This was illustrated by many lantern slides.

On May 1, the eleventh evening of the season, also a ladies' night, the M. I. T. Glee, Mandolin, and Banjo Clubs gave a concert. This is the second time the musical clubs have entertained the club, and was such a success that it is hoped that such a concert may be held each year.

On May 21, the twelfth evening, Mr. Frank B. Tracy, of the Boston *Transcript*, gave a smoke talk on "North Dakota and its Blizzards." As Mr. Tracy has lived in North Dakota and had many experiences there, the talk, with subsequent discussion, was particularly interesting.

In May the following special announcement was made:—

The House Committee is pleased to announce that, owing to the favorable reception of its service of lunch *à la carte* in conjunction with the usual *table d'hôte*, the same service has been extended to include breakfast. This will enable members who do not desire the full breakfast at 40 cents to make a more suitable selection at possibly less expense. It is hoped that the innovation will greatly increase the attendance at breakfast.

The following letter was sent to all Technology men whose addresses were on file at the alumni office:—

MAY 29, 1907.

To Technology Men:

After twelve years of successful existence the Technology Club is warranted in an ambition to increase its sphere of usefulness among Technology men. During these years the number of Tech men eligible for membership has nearly doubled. The Club's membership, however, has not increased in like proportion. In view of this the Executive Committee desires to call your attention both to the present advantages offered by the Club and to the greatly increased facilities it could offer if its membership were brought up to a number more adequately representing the large body of Technology men.

No club in the city gives as much for so little,—*table d'hôte* breakfast or lunch, 40 cents (also served *à la carte*); *table d'hôte* dinner, 60 cents; billiards and pool; reading and lounging rooms; many evening entertainments; sleeping-rooms for transient guests; in short, it is a well-equipped meeting place for Tech men, and should be headquarters for Technology activities. The dues of resident members are \$20; non-resident, \$6. Admission fee, \$10 and \$5, respectively.

A doubling of the membership would not only render the Club independent of the location of the Institute, but would assure the one thing that we should have to more adequately meet the growing needs of Technology men,—a larger club-house, with greatly increased facilities, such as better accommodation for private dinners, more sleeping-rooms for out-of-town members, some rooms for permanent occupancy, and more adequate provision for ladies.

It is earnestly desired that the Club obtain the required increase in membership as soon as possible, that it may be in position to develop its plans with an assured support. To that end the Executive Committee has decided to remit, in the case of new members, the present semi-annual pay-

ment of dues (April 1 to October 1), thus admitting applicants upon acceptance of application and payment of admission fee only. An application blank is enclosed herewith. Any man at some time connected with the Institute is eligible.

You are cordially invited to visit the club-house, and members will be pleased to present your applications for membership. Are you with us in the ambition for a more representative Technology Club?

EXECUTIVE COMMITTEE.

The following note was sent to all club members:—

To our Members:

The enclosed circular letter has been sent to Technology men: it explains itself. We all want a better club. It is up to you to get it.

If every member will make occasion to talk to his Tech acquaintance,—they will have seen the circular,—invite them to visit the club-house, and get applications, the doubling of membership will be assured. We do not ask each member to get *one* other, and quit: go after *ten*, and then we may *average* one new member each.

Don't let the other fellows do it all. Mere payment of dues never made a club. If all pull together, we will win.

EXECUTIVE COMMITTEE.

The members are to be commended for the response in this movement, and are urged to keep up the good work.

ANGELO T. HEYWOOD, '06, *Secretary*,
83 Newbury Street, Boston.

NEWS FROM THE CLASSES

1868.

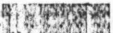
PROF. ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston.

Since the last issue of the REVIEW we have to record the death of A. F. Hall, who for the accuracy and care with which he did his work stood very high in the mechanical engineering profession. He organized and put in operation the method of pump manufacturing which has been adopted throughout the country by all the different companies. The obituary notice from the *Transcript* of July 23, 1907, is here quoted:—

Mr. Albert Francis Hall, who died in Somerville yesterday, was born in that town in 1845, although from early infancy he lived in Charlestown, where he attended the public schools, going from the grammar school, however, to work, as boys were wont to do in those days. After a few years of experience with a mercantile house and a manufacturing establishment (where he kicked the lathe a long period), his ambition for the development of his natural tastes led him to prepare for school again, and he entered the Massachusetts Institute of Technology at its opening, graduating in 1868 with its first class, numbering ten, he being the only mechanical engineer. He further pursued his studies, and acquired a thorough knowledge of German during a prolonged sojourn in Hanover, where he attended the polytechnic schools, and where he was a witness of many stirring scenes connected with the Franco-Prussian War. After his return to America he became associated with the George F. Blake Manufacturing Company, remaining with it as constructing engineer for many years, and after its absorption by other interests he continued with the consolidated companies until his death.

Some of his improvements introduced in the construction of steam pumps were covered by patents, but Mr. Hall could never see his own interests above those of his company, and he therefore remained in obscurity. His recognition by the founder of the company, George F. Blake, was a priceless source of satisfaction to him.

In his early career Mr. Hall taught mechanical drawing at the Institute of Technology and also in the evening schools of Boston, and gave private instruction in German. He was a member of the American Society of Mechanical Engineers, American Society of Civil Engineers, English Society of Civil Engineers, and German Society of Mechanical Engineers. With a natural fondness for all kinds of lettering, he became master of the pen, and for over thirty years—up to the present—he had engrossed the degrees for Harvard College, and prepared many important communications upon parchment from that college to sister institutions of learning.

He leaves four children, a daughter and three sons. His oldest son is a chemical engineer (Technology, 1902), another is in Harvard College, and the youngest in the high school. He had been an indefatigable and conscientious worker all his life, and his physical strength was unable to cope with an illness which came to him during last winter. 

—Word comes from Ellery C. Appleton that he is employed by the C. & A. R.R. at Springfield, Ill., under Mr. Felton. His family is living at Prescott, Ark.—Robert H. Richards has had an extremely interesting summer. Three weeks in June and three weeks in July he spent at Randolph, N.H., in Mrs. Richards's camp, with four assistants, Bardwell and Watt, '06, McMillin, '07, and Miss Shattuck (secretary), at work upon the next (3d) volume of his work on Ore-dressing. During the remainder of the summer he was at work on a practical mill problem in St. François County, Missouri, Great Falls, Mont., Clear Creek and Boulder Counties, Colorado. His new pulsator and another hindered settling classifier engaged a part of his attention. The pulsator is made by the Denver Engineering Works (Frank E. Shepard, '87), and gives promise of being the most efficient apparatus for certain ore concentration problems on the market. The following extracts are from the *Daily Tribune* of Great Falls, Mont., Aug. 11, 1907:—

Professor R. H. Richards, of the Massachusetts Institute of Technology, was at the Boston and Montana Works all of last week, in consultation with the management regarding the equipment for the proposed addition of 1,000 tons per day to the concentrating capacity of the works. . . .

Professor Richards has been the guest of Manager Goodale and Miss Goodale during his visit, and Tuesday evening Mr. Goodale invited all of the professor's former students who are now employed by the Boston and Montana Company, to meet him. There were at this "Tech" reunion Goodale, class of '75; Wheeler, '95; Snow, '00; Roberts, '00; Kehew, '03; Bates, '04; Harrington, Hallowell, and Ruggles, '06. Mrs. Wheeler, Mrs. Snow, Mrs. Kehew, and Mrs. Harrington were also present, and assisted Miss Goodale in the entertainment. . . .

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

B. C. Mudge is president of the Oxford Linen Mills, with the Boston office at 76 Essex Building and factories at Gardner, Mass. The capital is stated as \$2,000,000.—R. A. Hale read a paper on "Water Rights" at the New England Water Works Convention held at Springfield, Mass., September 13. Main, '76, read a paper on "Computation of Values of Water Power, etc." Main, Metcalf, '92, and Hale, with others, were appointed a committee to consider the question of water damages and collect various statistics in regard to the subject.—The secretary is collecting data and photographs for a new directory, and wishes all members to send material as rapidly as possible. It is intended to publish half-tones of the men as they are at present and as they were thirty years ago.

1878.

LINWOOD O. TOWNE, *Sec.*, Haverhill, Mass.

The secretary has an idea that his state of mind as to information of his classmates is pretty much on a par with that of most secretaries of earlier classes. So far as this department is concerned, one might infer that the old grads. were doing nothing,—at least nothing worthy of mention. The contrary fact is probably true,—

doing so much that they haven't time to write a mere secretary, likewise not frequently changing jobs. This particular secretary, prodding himself after the editor has prodded, sees no way to make copy but to follow the lead of the illustrious scribe of '68, and tell what *he* has done this summer. Coming to that, it isn't so much to say he's been to Cobalt; but, when that visit found him encompassed, so to speak, by a lot of younger grads. and under-grads., he feels like cheering up and telling about it. This secretary of Course III. spent some eight years in Colorado in the '80's, half of it with the companionship of another mining engineer who gladdened the camp with a bride and, duly, a baby boy. This spring a renewal of the twenty years ago friendship found our friend in Cobalt managing the Trethewey, while the baby boy had grown into Loring, '09, captain of the fencing team. All this meant one grand August reunion at Cobalt, Ontario. Hither, too, but on hard labor bent, had come some fifteen other M. I. T.'s Course III., finding permanent or vacation jobs. The Trethewey gathered in nine, who were set to work properly by Earle Crane, '02, superintendent, who has with him regularly John Shaw, '04. It was a joyous sight to walk around and see them work: Joslin, '09, and Goodwin, '10, made a team at the grand prize of a "machine" on underground drilling, blasting, etc., becanled and besoiled like old-timers. Grübnau, White, Shaffer, and Loring, all of '09, variously "cobbed" or "mucked" (Crane declared they too conscientiously almost dug away the rails) or "trucked," which latter proceeding was periodically made gymnastic by the car most mysteriously getting its centre of gravity beyond the base and rolling ignominiously down the dump. It was a sight for a Tech professor in English to see Loring, begrimed with duties in the shaft-house, between ascending buckets of ore, delving deep in the riches of summer reading in Herbert Spencer. Flint Elder, '07, seemed to hold down the softest job, running a steam pump, where, greasy and dirty, he revelled in the delights of Le Conte. Heywood, '06, labored at the Coniagas (a name, with its symbolic Co-Ni-Ag-As make-up, as clever in its way as the Uneeda man's happy thought), while Penny, '08, was on the Nipissing. But the height of distinc-

tion belongs to Angus E. Burt, '08, who in various ways assisted in bringing Ag out of the O'Brien mine. The Western Federation of Miners declaring a strike, and the street-speakers rather contemptuously referring to M. I. T.'s as "them students," Burt it was who alone held the honor of figuring on the Federation black-board "scab-list." And it is extremely doubtful if he ever paid the necessary V as admission to the Union ranks. O' evenings it was a delight to an old grad.'s heart when the younger men got together on Trethewey Hill, overlooking the sad, rambling town below, and gave vent to Tech feelings in "On Rogers' Steps," "Dear Old M. I. T.," and the "Stein Song." We doubt not that next term, viewing their tenderfoot course-mates, they will somewhat haughtily sing, "We've had experience,"—to say nothing of criticising the instruction offered. Elder and Grübnaue in latter August essayed a 1,200-mile canoe trip from Lake Temiscaming down the Ottawa River, and so on to Montreal, thence to Albany via Lake Champlain, etc. At writing they are reported nearing the Canadian metropolis, and seem in good prospect of having Joslin and Goodwin set up the dinners for them on their late September arrival in Boston town. To the writer the time spent in this camp, whether enjoying the wonders of the mines, the log-cabin hospitality, the delicious piney air, the paddling on or swimming in the lakes, the swapping tales of old Colorado days with Loring, Sr., or having these undergrads. rather allow you were birds of their feather,—all these things made an August of rare delight.—Frank P. Vogl died July 20, 1907. "Mr. Vogl overworked himself in the interests of Monadnock Mills, which concern he built up, and also himself built and established the Claremont Gas Light Company. At fifty years of age he was too young to lay down his work, but it was 'duty well done.'" When a Freshman, Vogl and the secretary were desk-mates in the drawing-room, and it was with most sincere regret that early in the course we saw leaving us one who was so completely a gentleman,—modest, courteous, earnest, thoughtful, and unselfish. That the class has seen little of him in recent years has been most unfortunate for us.

1882.

WALTER B. SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

Adams, from whom no direct news has been received for many years, is still in Honolulu, Hawaii.—Deering was abroad during the spring and early summer.—The firm of Hoppin & Ely has been dissolved. Ely's office remains at 32 Westminster Street, Providence, R.I.—Faunce is vice-president of the Carnegie National Bank, Carnegie, Pa.—Jones's residence is Washburn Park, and his summer residence at Deephaven, Lake Minnetonka, Minn.—Snow severed his connection with the B. F. Sturtevant Company in July, and is now located at 170 Summer Street, Boston. He is devoting himself to publicity engineering, improvement in industrial methods, special investigations, etc.—George L. Heins died September 26, at his summer home at Lake Mohegan, N.Y., where he had been confined for several weeks with meningitis. He leaves an enduring monument in the cathedral of St. John the Divine, on Morningside Heights, New York City, of which Heins and La Farge were the selected architects through a notable competition. Since his appointment in 1899 by Governor Roosevelt, Heins had met the exacting duties of State Architect of New York. His work stands as an honor to his class and to the Institute.

1885.

I. W. LITCHFIELD, *Sec.*, 10 Kenmore Street, Boston, Mass.

E. B. Homer has become a partner in the firm of Clarke & Howe at 72 Weybosset Street, Providence, R.I., and the firm will continue practice under the name of Clarke, Howe & Homer.

1887.

EDWARD G. THOMAS, Sec., 80 Wall Street, New York, N.Y.

The *Mining and Scientific Press* of San Francisco in its issue of June 15 prints in full an address of Frank E. Shepard to the graduating class of the Colorado School of Mines. In an editorial in the same issue the *Press* gives deserved praise to Mr. Shepard, and states that "the young men at Golden will have gained from Mr. Shepard's appeal for a higher standard, and we commend it to the older men also." . . .

The good class of '87 assembled for its twentieth anniversary at Chebacco Island in the Essex River, Mass., on June 15, 16, and 17, 1907. This delightful island, situated about a mile above the sea and commanding a view of the ocean from Cape Ann to Ipswich, was put at our disposal by the courtesy of Julian Cameron, to whom all were indebted, not only for this favor, but also for his active work in arranging for our reception. By automobile, motor boat, and train the men gathered till the following thirty-six answered the roll: H. S. Adams, Bryant, Burgess, Carter, Carpenter, Coburn, Crosby, Coombs, Carleton, Cameron, Cobb, Carney, A. L. Cushing, W. M. Currier, Draper, Douglas, Fish, Hussey, Hobart, Lane, Mulliken, McColl, Nutter, H. D. Sears, Spaulding, Sprague, Souther, Taintor, E. G. Thomas, F. A. Thomas, Todd, F. Thompson, G. Whitney, W. A. Whitney, Wakefield, and Very. We occupied five cottages belonging to Cameron and his family, and a marquee was erected in a most sightly spot, and served for our dining-room. Our material wants and all household cares were looked after by Joe Hendrie and a corp of helpers, and this part of our arrangements was without flaw. Joe appreciated that we were hungry for steamed clams and short lobsters rather than for *pâté-de-foie-gras*. '87's specialty always was baseball, so the strenuous members of our party and other drafted men gave close attention to the national game under modified rules which permitted the use of a ball six inches in diameter and a decided shortening of the base lines. The tennis court and tether-ball pole

were also kept busy. On the second day of our stay a grand athletic carnival was held, from which no one was exempt and many records were broken. The prizes were awarded satisfactorily, the only protest being from Carpenter, who contested the award in the standing broad jump on the ground that foot-pounds exerted (distance covered \times weight moved) should govern the award rather than distance alone. On that basis he had a cinch, so his argument was turned down. He later showed, however, that he did not care how much he carried by handily winning a dory race across the channel and back. Dress parade on Monday morning brought out a variety of beautiful (?) costumes, among which those of Grace Darling Thompson and Susie Souther were most effective, as displayed by their graceful wearers. Our most interesting stunt was a stereopticon show on Sunday evening. First there were shown on the screen about fifty views of old scenes, groups, and events in the years 1883-87 and the faces of some of us who have passed away. These pictures brought to us most vividly the old days and pointed out, in the sincere friendships then formed, the reasons for '87's unity and class spirit which has endured undiminished for twenty years. After these views were shown, Todd showed nearly two hundred views of a trip which he took with Mrs. Todd and others through the Yellowstone Park and Jackson's Hole, which were of great beauty and interest. While many of the men were forced by business affairs to leave on Sunday and Monday, more than a corporal's guard stayed till Tuesday morning, but each one went away voting our twentieth the most successful of our four reunions, and renewed in loyalty to '87 and the Institute.—Schmidt has recently finished the Michael Reese Hospital, a magnificent Jewish charity in Chicago of which he was retained as architect. This hospital is one of the finest in the country in its appointments, and has cost over a million dollars. It is absolutely fireproof. An illustrated article in the *Chicago Record-Herald*, June 18, 1907, shows it to be a most striking six-story building, situated near the lake front.—Shepard delivered the annual address to the students of the Colorado School of Mines at Boulder, Col., at the commencement exercises in June.—Sprague spent August and September in Alaska on an inspection

of mining properties.—McColl was with us only a short time in Institute days, and has had no opportunity to renew acquaintance with us till this year, when the reunion was too promising an occasion for him to miss. He is secretary and active in the management of the Nova Scotia Iron and Steel Company at New Glasgow, N.S.—The many friends and business acquaintances of Charles K. Stearns were shocked to learn of his death, at his home in Boston, on May 13 last. Mr. Stearns had been connected with the electrical industry ever since the beginning of his professional career. His early experience as engineer of the North-west Thomson-Houston Company and the succeeding administration of the General Electric Company gave him a varied experience and a complete acquaintance with the engineering questions connected with street railroad and lighting properties, which rendered his advice in his later work as consulting engineer of the utmost value to his clients. He was very thorough in his work, and designed the many plants which were put into his hands with rare good judgment and foresight. His illness was short, as he had been in his usual good health up to a few days before he left his office for the last time. Stearns was born in 1864, in Newton, Mass., and was educated in the Newton public schools and the Massachusetts Institute of Technology, graduating in 1887. He was married in 1889 to Miss Ethel Hunter, of Newton Centre, who survives him. Spaulding, who was most intimately acquainted with him, writes as follows in the *Electrical Review*:—

In Charles K. Stearns the engineering profession loses one of the kind of men it can ill afford to lose, one of the men who combined in a rare degree the result of technical training, practical experience, and sterling integrity. In private life and in his work the keynote of every action might fittingly be expressed in the two words, "thoroughness" and "sincerity." In commercial electrical engineering, especially as applied to railroad methods and economics, many a detail of design and construction now accepted as "standard" is due to his ingenuity and initiative. With a heart as tender as a woman's in family and personal relations, but with a conservative and coolly analytical judgment, inherited from good old New England Puritan stock, his was a rarely balanced temperament. Many a struggling salesman and contractor has good reason to remember his readiness to "help out"

on a genuine error or unfortunate business condition for which he was not responsible, but the "shirk" or "quitter" found him inexorable, as the record of many a railroad and power and lighting system will bear silent evidence to-day. To his friends a friend of friends; to his employers a faithful servitor; to his business associates a rare exponent of the "square deal" in business relations; and to all who knew him a gentleman; broad in liberality to others and narrow in the performance of self-manifest duty,—such was the character of Charles K. Stearns.

1888.

WILLIAM G. SNOW, *Sec.*, 1106 Penn Mutual Building, Boston.

Some important changes in and additions to the official staff of the Northern Pacific Railway Company have been made to provide for the most rapid work in adding to the railroad, so as to keep pace with the growth of the country. It has been decided to have two general managers,—H. J. Horn to be general manager, in charge of maintenance and operation in Montana, North Dakota, Minnesota, and Wisconsin, with headquarters at St. Paul, as at present. Prior to graduation Horn did more or less engineering work in Minnesota, Iowa, and North Dakota. After graduation he was assistant engineer of maintenance of way on the Chicago Great Western from June, 1888, until March, 1889, when he began work with the Northern Pacific. He has been with that company ever since, holding various positions in the engineering and operating departments, including division superintendent, general manager of coal department, and since April 1, 1904, general manager. H. C. Nutt will be general manager in charge of maintenance and operation of the lines in Washington, Idaho, and Oregon, making his headquarters at Tacoma.—The following changes in address have been reported to the secretary: W. H. Gerrish, Commercial Twine Company, 542 W. 52d Street, New York City.—John E. Doak, Doak Gas Engine Company, Oakland, Cal.—G. C. Scales, 475 Centre Street, Newton, Mass.—C. L. Brown, 38 Wallace Street, West Somerville, Mass.—F. H. Adams, 54 Kent Street, Akron, Ohio.—G. L. Munn, Board

of Trade, Springfield, Mass.—James W. Loveland is now works manager for B. T. Babbitt, Incorporated, soap manufacturers. They will soon fully occupy their fine new plant at Babbitt, N.J. The present New York City office is 82 Washington Street.—G. U. G. Holman is now manager of the electrical department of the Boston branch of the H. W. Johns-Manville Company, with headquarters at 55 High Street, Boston.—Henry Forbes Bigelow will remain abroad until November 1.—Benjamin G. Buttolph, of Providence, R.I., writes in part as follows:—

Mrs. Buttolph and I had a delightful trip to the coast in May and June. On the way out we stopped at many points of interest. At Omaha I had a short chat with Tom Kimball. He is busy as ever. Mr. Secretary Root had invited him, as one of the eight paid architects chosen, to submit plans for the new Palace of Peace in Washington, D.C. At Denver we were entertained at luncheon by Mr. and Mrs. Frank Shepard ('87). He showed us about the Denver Engineering Works, of which he is president. They are growing, and already have a fine layout of the best machine tools. He and his partner are justly proud of their reputation in their line. In Oakland, Cal., I spent an evening with Russell M. Clement. His oldest boy, about fifteen, is an expert wireless student. I listened through apparatus devised by him to a message being sent by one of the coast stations. Clement was city engineer of Oakland for one or two terms, but is in private practice there now as a civil engineer. We enjoyed our visit to the various coast cities, particularly Seattle, the scene of Stone & Webster activities. I was interested in seeing their most modern power-house and car-houses, all of reinforced concrete throughout. . . . Edwin D. Pingree ('96) and myself are now the vice-presidents of the Manufacturers' Rhode Island Mechanics, State, Enterprise, and American Mutual Fire Insurance Companies, having been elected in June. John R. Freeman ('76) is president of these companies.

1889.

PROF. W. E. MOTT, *Sec.*, Mass. Inst. of Technology, Boston.

C. N. Borden, whose election as treasurer of the Richard Borden Manufacturing Company of Fall River, was recently noted, reports a quiet but busy life in that "burg."—Hollis French is at work upon

two water power plants and the equipment of three hospitals. He finds no signs of business depression in his line, and, despite a very busy summer, has found time to win several prizes with his yacht.—H. Howard is expected home from abroad about September 20.—W. W. Lewis has been busy for some time upon the problem of the reconstruction of the Haymarket Square approach to the Washington Street Subway. The shifting of the elevated trains from the present subway to the new one, without interrupting traffic, involves much study.—W. E. Mott gave a course of thirty lectures in theoretical hydraulics at the summer session of Columbia University, and during the remainder of the vacation has been engaged upon a study of the congestion of teaming traffic in the city of Boston, for the Boston Transit Commission.—E. E. Peirce, as the chief representative of the Massachusetts Board of Harbor and Land Commissioners, has recently completed, in conjunction with the Connecticut representative, the rerunning and marking of the Massachusetts-Connecticut boundary. One hundred and ninety-nine boundary stones were set.—The secretary is in receipt of cards announcing the marriage in New York, on August 20, of Mr. John Hall Rankin and Mrs. Charles Shepard.—W. B. Thurber is credibly reported to be adorning his Milton home with a reproduction of the hanging gardens of Babylon.—A. L. Williston was elected secretary of the Society for the Promotion of Engineering Education at the convention recently held in Cleveland.—Harrison Loring, Jr., reports that he is able to keep busy eight hours a day with the increased work of his company. According to latest advices the labor question, which has been the source of so much newspaper disturbance in the last six months, has quieted down, and we shall probably not hear from him again in that line for some time.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

When Prince Wilhelm of Sweden was in Boston, on the trip to Nahant the party went down on Major Hayden's yacht.—F. P.

Royce, Jr., has been elected a director of the American Pneumatic Service Company.—The address of S. A. Morse is now Box 656, Sacramento, Cal.—Mr. and Mrs. G. N. Calkins have been spending the summer in Cambridge, where Calkins had easy access to the Oakley Country Club.—The address of A. W. Woodman is 909 Stock Exchange, Chicago.—We regret to report the death of Mrs. George Warren Fuller, who died on June 21.—Mr. and Mrs. Walter Ellis are now located at Ticknor Hill, Scituate, in their new home, "View the View."—The address of W. G. Curtis is 10 Grand View Avenue, Wollaston.—E. P. Whitten is at the Grand Hotel, Manila, Philippine Islands.—H. H. Pope is at 133 Essex Street, Providence, R.I.—Moses Lyman, Jr., is with the National Aluminum Works, Wellsville, N.Y.—The address of C. R. Nason is 20 Madison Street, Hartford, Conn.—Brokerage houses are commenting upon the magnificence of the New York offices of Hayden, Stone & Co. They are declared to be the finest brokerage rooms in New York, and this means in the world. All the fittings are of marble and mahogany. The offices occupy the whole of the Broad Street and Exchange Place wings of the ninth floor of Broad Exchange Building. There are fourteen separate rooms in addition to the customers' room and the clerks' quarters. The latter are in one big room, seventy-five feet square, behind grilled partitions. Gossip says these furnishings cost more than \$100,000. The following extract is from the *Boston Transcript*:—

CENTRE OSSIPEE, N.H., September 23.—One man lost his life and another was saved only by the heroic work of a Massachusetts woman, who is camping at the lake, by the capsizing of a canoe on Ossipee Lake yesterday. Ernest Machado, an architect of Salem, Mass., who had a summer camp at Danforth Bay on the lake, and his nephew, Walter Osborne, also of Salem, started to paddle across the lake in a canoe. While a considerable distance from shore, the canoe capsized and both men were thrown into the water. Machado was almost immediately drowned. Osborne clung to the canoe and cried for help. The accident was apparently seen from the highway, and Mrs. Emma Whittemore, wife of Walter Whittemore of Wakefield, Mass., who has a summer home at Freedom, near the lake, and who was driving with her husband, jumped from her carriage and ran to

the water's edge. Here she found a boat, but no oars. Grabbing up a piece of board which lay near by, she struck out boldly for the lone figure clinging to the canoe far out in the lake. After a long struggle Mrs. Whittemore finally reached the canoe, and drew the almost exhausted youth into her boat. The return trip was made safely.

Mr. Machado was born in Manchester, June 30, 1868. He was graduated from the Salem High School and from the Institute of Technology. Many buildings in Boston and along the North Shore were built according to plans devised by him. He leaves a mother, Mrs. Elizabeth F. Machado, with whom he made his home at 5 Carpenter Street, Salem, and five sisters and a brother. He was an attendant of the South Congregational Church, Salem, and had offices in that city and in Boston.

1891.

HOWARD C. FORBES, *Sec.*, 88 Broad Street, Boston.

On June 30, 1907, Henry G. Bradlee became a partner in the firm of Stone & Webster, Boston, Mass.

1893.

FREDERIC H. FAY, *Sec.*, 60 City Hall, Boston.

On account of the transfer of the engineering offices of the American Telephone and Telegraph Company from Boston to New York, Grosvenor T. Blood, who has been connected with the engineering staff of the company for fourteen years, has moved to the latter city. Blood's new address is 15 Dey Street, New York City.—Samuel H. Brockunier, M. Am. Soc. M. E., formerly of the Kaaterskill Paving Brick Company, Catskill, N.Y., has been appointed manager of the Green Mountain Mining Company of Silverton, Col.—John R. Burke, for ten years assistant engineer of the Massachusetts Board of Harbor and Land Commissioners, Boston, has resigned to engage in contracting for dredging and river and harbor improvements. He will be located temporarily at 56 Lincoln Avenue,

Wollaston, Mass.—James A. Emery has resigned as vice-president and general manager of the Birmingham, (Alabama) Railway Light and Power Company, and with two others has organized the Emery Steel Company for the rolling of steel bars and the manufacture of spikes and steel specialties. The offices of the company are at 1004 Brown Marx Building, Birmingham, and their rolling mill and works at Gadston, Ala. Emery, accompanied by Mrs. Emery and their two daughters, visited his old home in Haverhill, Mass., in September.—Frank Houghton is cashier of the National Shawmut Bank of Boston.—Edmund I. Leeds is a member of the firm of Brainerd & Leeds, architects, which has recently designed and supervised the construction of the Ford Building, one of the handsomest office buildings in Boston, at the corner of Bowdoin Street and Ashburton Place, opposite the State House. The offices of the firm have been moved to the new building, Leeds's address being 15 Ashburton Place, Boston.—Robert Duncan Reynolds and Miss Fanny Louise Lawrence, daughter of Mr. and Mrs. George P. Lawrence of Sharon, Mass., were married on the 3d of October.—On October 1 Percy H. Thomas leaves the Westinghouse interests to join with Newitt J. Neall, M. I. T. 1900, consulting engineer of Boston, to form the firm of Thomas & Neall, electrical engineers, with offices at 52 Williams Street, New York, and 12 Pearl Street, Boston. The firm expects to do a general consulting work in electrical engineering, giving special attention to high tension transmission design, to the investigation of the difficulties in operation on high voltage plants, lightning protection, and extra high tension practice. After graduating from the Institute, Thomas entered the employ of the Westinghouse Company as a "student." His early work was an insulation of apparatus and on transformers, followed by a stay in Brazil in 1896-97, in connection with one of the early transmission plants. Later he spent some years in the investigation of static disturbances and lightning with special reference to the protection of commercial systems. Later, as chief electrician of the Cooper-Hewitt Electric Company, he carried on the practical development of the Cooper-Hewitt mercury vapor apparatus. Thomas has for some time been much interested in the American Institute of Electrical

Engineers, before which he has read a number of papers.—Samuel Payson Waldron and Miss Hariet Isabel Billington were married at East Orange, N.J., October 8.—The following changes of address have recently been received: George S. Barrows, 910 Grand Avenue, Kansas City, Mo.—Dr. Albert R. Beddall, 5319 Chestnut Street, Philadelphia, Pa.—Jacob Winn Brown, 85 Fifth Avenue, New York, N.Y.—Farley G. Clark, Fourth and Front Streets, Long Island City, N.Y.—William W. Cutler, 14 Fulton Street, Boston, Mass.—Edward J. Flynn, 28 State Street, Boston, Mass.—H. C. Foss, 120 Boylston Street, Boston, Mass.—Frank B. Holmes, Beech Street, Chelsea, Mass.—George M. Hooper, 4 St. Botolph Street, Boston, Mass.—Louis Levi, 610 American Building, Baltimore, Md.—Professor Emil Lorch, 909 East University Avenue, Ann Arbor, Mich.—Alfred C. Lotz, 1208 Rector Building, Chicago, Ill.—Professor Elizabeth S. Mason, 53 Crescent Street, Northampton, Mass.—George E. Merrill, 204 Prince George Street, Annapolis, Md.—George L. Mirick, 293 Washington Street, Boston, Mass.—Mrs. Edna Wadsworth Moody (Mrs. Herbert R. Moody), 23 Hamilton Terrace, New York, N.Y.—Arthur S. Pevear, 30 Kilby Street, Boston, Mass.—H. R. Sargent, 2 Rugby Road, Schenectady, N.Y.—James S. Wadsworth, 164 High Street, Boston, Mass.

1895.

H. K. BARROWS, *Acting Sec.*, 6 Beacon Street, Boston.

Changes of address are reported as follows: D. H. Thomas, Union Trust Building, Baltimore, Md.; J. R. Wells, 3 Wells Building, Quincy, Ill.; W. A. Wilson, 72 Magnolia Street, Boston, Mass.; M. M. Wheeler, Box 333, Central City, Ky.; Miss E. Wood, 36 Wellington Street, Waltham, Mass.; E. D. Barry, 5928 Walnut Street, Pittsburg, Pa.; F. W. Harris, 547 Garden Street, Little Falls, N.Y.; C. A. Phillips, Ashland Block, Chicago, Ill.; K. S. Harbaugh, 1306 Alaska Building, Seattle, Wash.; R. W. Carr, 123 Aubrey Street, San Antonio, Tex.; E. F. Smith, 8 James Street, Greenfield, Mass.; G. B. Welling, North Bennington, Vt.; G.

Carleton, Camden, Me.; H. K. Turner, Oak Hill, Newton Centre, Mass.; C. H. Parker, 39 Boylston Street, Boston, Mass.; A. E. Wheeler, B. & M. C. C. & S. M. Co., Great Falls, Minn.; H. P. Coddington, Harrison Building, Philadelphia, Pa.; A. J. Lynch, Post-office Building, Boston, Mass.; B. J. Clergue, Box 997, Sault Ste Marie, Ontario; A. C. Jones, American House, Boston, Mass.; F. C. Hatch, 123 Grant Avenue, Newton Centre, Mass.; Miss M. C. Brawley, 6 Sachem Street, Roxbury, Mass.; H. E. Davis, 1 Madison Avenue, New York City; H. E. Nelson, 633 Tremont Street, Boston, Mass.; P. H. Kemble, Enfield Street, Enfield, Conn. (permanent address Windsor Locks, Conn., for mail).—Notice has just been received of the death of William P. Sargent, of Boston, January, 1907.

1896.

E. S. MANSFIELD, *Sec.*, 39 Boylston Street, Boston.

The '96 Decennial Catalogue has finally made its appearance after many months of struggling, and it is left for each individual reader to judge of its merits and defects.—W. S. Leland was married on June 26, 1907, to Miss Saidee Watrous. They are now living in South Framingham, Mass.—At a recent meeting of the Electrochemical Society, George K. Burgess read a paper on "The Present State of the Art of High Temperature Measurements."—In a letter received from H. D. Jackson he includes the following description of his work:—

I have under way a factory building, which I have designed, and expect to supervise the execution and the installation of all the machinery. I also am investigating and hope to report on several shoe factories, a printing plant, and a textile machinery manufacturing company. In all of these plants I hope to be able to convince them that electrical apparatus is to their advantage, and to supervise the installation of the necessary motors, and possibly generators to furnish power to drive their machinery. I have also considerable prospect of acting as advisory engineer of a considerable sized plant in Mexico, this plant to generate power from a waterfall, trans-

mitted some distance, and utilize the power for the operation of a sugar mill and also an electric car line. They also propose to use electric motors in the ploughing of their fields.

—Word has been received that M. A. Sears and L. L. Lamborn have each recently welcomed a stranger into his home.—According to latest advices, Thanisch is now located in Mayer, Ariz.—C. E. Locke accompanied a summer school class of about ten on a three weeks' trip, visiting Baltimore, Harrisburg, Lebanon, Bethlehem, Hazleton, New York. Their investigations were along the line of the metallurgy of iron, steel, copper, zinc, and lead. Mr. Locke has also taken a business and pleasure trip through California, Eastern Canada, and Newfoundland, studying copper, asbestos, coal, and pyrites.—On September 25 an addition was made in the secretary's family by the advent of Edward Bancroft Mansfield.—The following is copied from the *Electrical World* of August 17:—

Mr. Theodore Inslee Jones has recently been appointed manager of the sales department of the United Electric Light and Power Company, of New York City. In this position he will have full charge of the sales end of the United Company's business, including all contracts for electric light, power, heat, and sign work, together with the company's advertising. Mr. Jones is an electrical engineer, graduating from the Massachusetts Institute of Technology in the class of 1896. Immediately after graduating, he took a position with the American Telephone and Telegraph Company in its New York office. In this position he identified himself with the work of the inspection and traffic departments, originating and equipping in connection with Assistant General Superintendent Brooks, of that company, the first school of instruction for employees engaged in telephone traffic, which has since become an important adjunct of all telephone companies' work. After four years' experience with the American Company, he took up similar duties with the New York and New Jersey Telephone Company in its New Jersey division, where he had charge of the traffic department. While engaged in this work, Mr. Jones prepared and delivered a course of lectures on telephone and electric light topics for the evening branch of the New York Board of Education, which he has continued each year up to the present time, last year giving two courses, one on telephone engineering and one on illuminating engineering. The early part of the present year

he accepted a position as illuminating engineer with the Nernst Lamp Company in its New York district, and when in this position was offered the managership of the sales department of the United Company, the duties of which position he is now entering upon. Mr. Jones is the author of a number of articles on electrical topics, among them being "A Study of the Efficiency of the Electric Light Plant of the Boston Public Library," "Notes and Suggestions for the Instruction of Employees engaged in Telephone Traffic," "The Progress of the Telephone" "Five Papers on Illuminating Engineering." The new sales manager will make his headquarters at the general offices of the United Company, 1170 Broadway.

1897.

JOHN A. COLLINS, Jr., *Sec.*, 74 Saunders Street, Lawrence, Mass.

W. H. Sellew, whom the secretary has been unable to locate for several years, has at last been found. He is principal assistant engineer with the Michigan, with headquarters at Detroit.—The secretary was pleased several months ago to see a number of the autographs of '97 men. This is the next best thing to seeing the men themselves. The document in question that bore the signatures was the subscription list to the stock of the *College World* that was to be issued in August. The secretary's copy must have gotten lost in the mails.

1898.

PROF. C.-E.-A. WINSLOW, *Sec.*, 157 Walnut St., Brookline, Mass.

Steffens is now at Johnson City, Tenn., as engineer of the Southern & Western Railroad.—F. A. Jones writes from Brookneal, Va., where he is engaged as division engineer of the Tidewater Railroad, that he has recently recovered from a six weeks' attack of typhoid.—Pratt came on from Columbus to Boston as a delegate to the September meeting of the New England Water Works Association. He is engaged, as engineer of the State Board of Health of Ohio, on an extensive study of the sewage disposal systems of the State.—

Dawes announced the birth of a daughter, Mary Bradley, on the 4th of July, 1907.—H. W. Jones, who was some time ago appointed a medical officer of the United States Army, writes:—

Have been stationed in Philippine Islands since January, '07, and have had much active service during the campaign in Samar against the Pulajanes. I have also been engaged in some exploring expeditions on the island. In the near future I expect to attempt the ascent and measurement of Mount Amanduing in Leyte, hitherto unascended by white men.

—Mark E. Taylor, of the Ordnance Office, War Department, was married during the summer to a Washington young lady. Sherman was married on Wednesday, September 11, at Bramwell, W. Va., to Miss Katharine Buck, daughter of Mr. and Mrs. Stuart Manwaring Buck. Mr. and Mrs. Sherman will live at 3 Auburn Court, Brookline, Mass.—Butcher has left the Massachusetts State Board of Health to take a position with the firm of Metcalf & Eddy, consulting sanitary engineers, 14 Beacon Street, Boston. He is at present engaged in working up municipal engineering data for the Boston Finance Commission.—A Boston paper reports the death in California of G. F. Ulmer on Aug. 29, 1907. If this report is confirmed, the class has lost one of its best comrades and the Institute one of its ablest and most promising graduates.

1899.

HERVEY J. SKINNER, *Sec.*, 93 Broad Street, Boston.

Harry L. Morse has been promoted to First Lieutenant of Artillery, and is stationed at Fort McKinley, Portland, Me.—George Heckle was in Boston the middle of September. He is a consulting engineer in Kansas City, Mo.—Lewis Wetmore Riddle was married to Miss Elizabeth Fuller Emmons, September 5, at Northboro, Mass. They will be at home after November 1, at 4635 Ellis Avenue, Chicago.—Herbert H. Riddle, who is an architect in Chicago, was in town the early part of September, and

spent a few days at the Somerset. His Chicago office is 1541 National Bank Building.—James A. Patch is the proud possessor of a second child in his far-away home in Syria.—George C. Winslow is doing inspection work in Detroit on the new tunnel for the Michigan Central R.R., now being built under the Detroit River.—J. A. Stetson is with the Portland Railway Light and Power Company, Portland, Ore.—Sherrill has been appointed assistant professor of theoretical chemistry at the Institute, and will relieve Dr. Noyes, who has been made Acting President, of a large part of his work in theoretical chemistry.

1901.

ROBERT L. WILLIAMS, *Sec.*, 30 Waban Hill Road, Chestnut Hill, Mass.

With this writing for the REVIEW, the secretary is to resign in favor of Robert L. Williams (II.), to whom all future class communications should be addressed. This resignation was necessitated by the secretary's removal to New York, where he is now employed by the Board of Water Supply of that city, 299 Broadway. It is with much regret that the secretary finds it necessary to give up the class work, which he found very enjoyable when time was available. He wishes to extend his thanks to the class for their cordial response to his last circular, and, lastly, he wishes to commend to the class the incoming secretary. Give him all the support and information you can, and he will do his part to keep the class wide-awake. The secretary has come into touch with very few '01 men this summer. He rubbed up against C. A. Whittemore, who was remodelling a building under C. H. Blackall, architect, while the secretary was working on the substructure for the Boston Transit Commission.—F. A. Colby (IV.) and H. T. Blanchard are with Carrère & Hastings, Blanchard now being engaged as resident architect on the construction of a hospital in Palmerton, Pa.—E. F. Lawrence (IV.) reports that he and his associates in Portland, Ore., are completing plans for a \$400,000 Young Men's Christian Asso-

ciation and Young Women's Christian Association building, and have just closed bids for a steel foundry plant consisting of some six or eight buildings. He is as enthusiastic as ever about the North-west, and thinks there is room for more Tech men there.—William J. Sayward (IV.) starts this week on a four months' trip in Europe, after which he expects to set up business out in Seattle with an associate architect.—Puckey is established in Wilkes-Barre, Pa.—Among Course I. men, Whitman has left the Panama Canal Commission, and has entered the navy as assistant civil engineer. He passed the examination some two years ago, but could not then be appointed on account of his eyes. These have since improved so that he was able to qualify, and he is now stationed at the League Island Navy Yard, Philadelphia. The navy is to be congratulated as well as Whitman, and I am sure the class wishes him every success in his chosen field.—L. P. Wood (I.) was married on August 27 to Miss Mabelle Faville Allen, of Milwaukee. Both parties were loyal friends of Tech and strongly anti-merger in their sympathies; yet they have united their futures, and we wish them the fullest happiness.—Ralph S. Loring (I.) was married on September 4, to Miss Linnie Marie Hubbell, of Milford, Mich.—Langdon Pearse and Wilfred DeBerard (XI.) are out with the People's Water Company, Oakland, Cal.—Among the miners Arnold is owner and operator of the "Omo Jacks" lead and zinc mines at Joplin, Mo., and is certainly making good.—A. J. Eveland is still at Manila as consulting mining engineer and general manager of the Eastern Mining Company.—Baxter is now in Mina, Nev., with McKay & Baxter.—It is with deep regret that the secretary records another fatality in our class, that of Arthur H. Birks (IV.), who was killed in the fall of the Quebec Bridge on Aug. 29, 1907. Mr. Birks was born in 1879 in Peoria, Ill. He studied for one year at Princeton, and then came to M. I. T., joining the class of 1901 in the sophomore year. He graduated with the class of 1901 in Course IV., and, after working through the summer with the Eastern Bridge & Structural Company of Worcester, went back to Tech for a post-graduate year. Leaving Tech in June, 1902, he entered the employ of the Phoenix Bridge Company, where he

remained till his death. After a short time spent as draftsman, he was transferred to the erection department. There he worked partly in the field on erection and partly on designs for erection. Among other works he helped to make the designs for the erection of the great Quebec Bridge, and for the last two or three years has been resident engineer on the erection of that structure. This was a responsible position, and it is the testimony of his superiors that he did his work with the utmost fidelity. He was on his regular tour of inspection toward the close of work on August 29, when the catastrophe occurred, and he was carried down with the bridge. His body was recovered a few days later. Birks had won the confidence of his employers by his skill and judgment, and the respect of his associates by his noble character and personal tact. The Institute and our class have lost one of their most promising members, and will feel the keenest sorrow for the untimely death of our friend. Mr. Birks was an associate member of the American Society of Civil Engineers.

RALPH H. STEARNS, *Ex-Sec.*

1902.

F. H. HUNTER, *Sec.*, 75 Park Street, West Roxbury, Mass.

Since the last REVIEW went to press, work on the Second Record Book of the Class of 1902 has been pushed steadily. Circulars and reply blanks were mailed in August, and a large number of replies are in. With the help of some members, and through other sources, the secretary has been able to get in touch with several men whose addresses have long been missing from our rolls. Unfortunately, a number of men have neglected to reply as yet, and a *bury-up* call is being circulated. Statistics are being compiled, and other matter prepared for the press. All matter must reach the secretary by November 15, and the book will be issued as soon after as possible, probably soon after January 1. With the aid of the reply blanks in hand it would be possible to fill a large part of this issue of the REVIEW, but only what is most recent is here given. The fall "crop" of weddings includes the following of our classmates: A. A.

Jackson was married on September 5 to Miss Louise Annie Salfisberg, of Dorchester, Mass. They will be at home after November 1 at 5220 Indiana Avenue, Chicago.—On September 14 Greeley married Miss Marjory Ellen Houghton. The wedding took place in the Hancock Church, Lexington, Mass. R. V. B. Blaisdell, '02, was one of the ushers. J. W. Smith and Hunter were the other members of the class on hand.—Arthur Sawyer was married in Chicago on September 30 to Miss Grace Frances Barrett. They will make their home at Delaware Mine, Mich., where Sawyer has been for some time.—Recent changes among our mates are: B. G. Philbrick is sanitary bacteriologist for the People's Water Company of Oakland, Cal., his address being 1014 Broadway.—Townsend is now with the Dominion Bridge Company of La Chine, P. Q.—Haskell has returned to Boston, and is now chemist for H. P. Hood & Sons of 494 Rutherford Avenue, Charlestown, the well-known milk contractors.—Avery is still with the New York Central, but has been shifted to Watertown, N.Y. His address is 24 Emerson Place.—Ned Baker, Vatter, and Swan are among the A. T. & T. Co. men expecting transfer from Boston to New York in the change of headquarters by that concern.—Miss Bates is teaching cooking in the New York City public schools.—Norman E. Borden, Jr., will celebrate his birthdays on the 31st of July, dating from 1907.—George Moody Worden is four days older.—Farmer has returned to Nashua, N.H., with the Boston & Maine Railroad.—Emilio Madero is at San Pedro, Coahuila, Mexico, where he has interests in mining and other industries.—Manley has been in Boston this summer on general civil engineering work.—Manning is now with Stone & Webster in their Boston offices.—L. E. Moore is assistant professor of civil engineering at Massachusetts Institute of Technology. He is the first '02 man in the Tech Faculty.—Patch is now at the Charlestown (Mass.) Navy Yard, in the department of construction and repair.—Redfield is studying in Paris. Care American Express Company, 11 Rue Scribe.—Robert White was recently chosen president of the United States Ozocerite Company, of which he was formerly sales manager. His office is 503 Rector Building, Chicago.

1903.

W. H. ADAMS, *Sec.*, Polytechnic Institute, Brooklyn, N.Y.

Two more members of the class have gone into business for themselves, as the following announcements will show. Edward Ely Hoxie and Alexander J. Scholtes announce that they have formed a copartnership for architectural work at 622 Berkeley Building, 420 Boylston Street, Boston, Mass.—The undersigned announce that they have consolidated the business heretofore known as D. C. Picard, consulting chemist, and the Cotton Seed Products Laboratory, respectively, and have formed a copartnership to conduct a general consulting and analytical chemical business under the firm name of Picard & Law, with offices and laboratory at 231½ Marietta Street, Atlanta, Ga. (Signed) D. C. Picard and Thos. C. Law.—F. G. Cox has returned to New York from England, and may be addressed 17 Battery Place, New York, care of Otis Elevator Company.—C. Frank Sammet has a position in Washington, D.C., with the Bureau of Chemistry, department of agriculture.—The class family is still increasing. Cushman announces the arrival of Master Allerton R. Cushman on Feb. 10, 1907.—Gleason has returned to the Green Economizer Company in Boston.—While on his vacation, the secretary saw Olmstead and Nutter, who, together with Newman, are working on a new constitution. They have finished the constitution, and are now considering the method of submission to the class for approval or disapproval. The annual report has been held up in order to send it out with the new constitution.—The secretary has received a letter of thanks from Hayden, to whom was sent the class baby cup the first of the year. The letter will be published in the class book.

1904.

CURRIER LANG, *Sec.*, Michigan Central Depot, Detroit, Mich.

George M. Magee and Henry W. Rowe recently formed a partnership for the practice of architecture under the firm name of

Magee & Rowe at 611 Compton Building, 161 Devonshire Street, Boston.—Walter J. Gill, Jr., has removed from Boston to Washington as assistant examiner in the United States Patent Office.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer Street, Boston.

The vacation season brought quite a number of '05 men back to Boston. Some of these looked up the secretary, some he looked up, and some he butted into by sheer luck. The Boston Club, '05, kept up its gatherings at the Technology Club, on the second Tuesday evening of each month, with an average attendance of ten. '05 men coming home, remember the date. Some of the fellows who did not come home wrote, and the following items have been accumulated: A. F. Belding is with the Sullivan Machine Company at Joplin, Mo., and writes that it is the liveliest little town he ever got into. While mining is the principal industry, it is not at all a mining town, but a regular city of forty or forty-five thousand inhabitants and a great little burg. (Artie must be on the Old Home Week Committee.)—J. H. Brown, Jr., is with the Sullivan Machine Company in their New York office. He leaves shortly on a trip of a couple of months to Panama, where this company has considerable machinery installed.—R. N. Turner graduated last June from the Boston University Law School. He has been admitted to the bar, and is now in Homer Albers' law office.—Ros Davis writes to call attention to an error in the previous issue of the REVIEW. The Singer Manufacturing Company is located at Elizabethport, N.J., not Newark. He says that news gives that town a wide berth, and concludes, "Oh, I forgot—I am not married yet." Will it be soon, Ros?—W. K. Lewis, who has been studying at Breslau, Germany, spent his vacation in Finland.—E. W. Wiggins has been transferred from the Wisconsin plant of the Eastern Dynamite Company to their works at Landing, N.J. He is engaged to a Miss Marcy (Wellesley, '07).—Dan Harrington is with the Eastern Dynamite

Company at Barksdale, Wis.—Norman Lombard has been admitted to the bar of Missouri. He is practising mechanical engineering, specializing in Portland cement.—A. G. Prescott has left the WhitlockTM Coil Pipe Company to take a position as inspector with the NewTM England Bureau of United Inspection. His headquarters are at Boston.—H. W. Kenway, F. W. Guibord, and W. W. Ammen were moved up from fourth assistant to third assistant examiners in the last promotions at the Patent Office.—Ammen was married on September 7 to Miss Lura Clarinda Bates at the home of the bride in Washington.—Gorman Crosby was admitted to the Washington bar last July. He has since left the Patent Office to take a good position with Kenyon & Kenyon, patent attorneys, 51 Wall Street, New York.—George B. Jones spent his vacation from the Patent Office in studying law at the University of Chicago. This would seem hard lines to some of us, but appears to be nuts for George. He will return as a Senior in the evening school at George Washington University.—H. F. Gammons was married in July. He is examiner in the class of aërial navigation, which has recently become quite active since the Wright Brothers patented their machine. He is a Sophomore at the National Law School.—Paul A. Blair is engaged to Miss Ruth Brown, of Washington. He was admitted to the Washington bar last July, and is in charge of the Washington office of Howson & Howson.—Ralph R. Patch was married to Miss Christina V. Johonnott, of Stoneham, in August. Harry Nabstedt was best man, and R. S. Gardner one of the ushers. Patch is with the E. L. Patch Company, manufacturing chemists, of Stoneham, Mass.—The secretary received an announcement of the wedding of John W. Taylor to Miss Cora Graf on September 9 at Cincinnati. They will live at Massillon, Ohio.—Ned Jewett writes, “I beg to report that on the eighth day of August, in the year of our Lord nineteen hundred and seven, at 7 A.M., was born to Elise and T. E. Jewett a little daughter, Margaret.” Ned has been busy this summer erecting concrete grain elevators through the State of Kentucky. He concludes, “The great reunion is fast drawing near, and I am glad the baby will not be old enough to appreciate her papa’s actions at that time, for I have a feeling there

will be something doing."—C. R. Prichard writes from Beverly that on July 25 they were made very happy by the arrival of a little boy, weighing nine and one-half pounds, to be named Charles Rollins, Jr.—Charles E. Freeman was married on September 6 to Ethel Vaughn Davis at Somerville. They will live at 437 Navy Place, N.W., Washington, D.C.—On June 15 Miss Edith Z. Ellis (Smith, '06), of Lynn, announced at a small luncheon at Northampton her engagement to H. A. Wentworth.—The engagement of G. B. Perkins and Miss Mary Wardwell, of Salem, was announced October 2.—R. S. Gardner has left the General Electric Company to come back to the Institute as assistant in the Mechanical Engineering Laboratory.—G. B. Parsons is in Boston again, and reports the following items about '05 men with the Stone & Webster Company: The Terre Haute Traction and Light Company, where he was assistant to the manager, has been sold by the Stone & Webster Company, and he is awaiting another assignment. E. T. Steel has been promoted to assistant superintendent of lighting in the Ponce Railway and Lighting Company, Ponce, Porto Rico.—Walter Munroe is with the Dallas Electric Light and Power Company.—R. M. Harding is with the Savannah Electric Company.—Warren W. Loomis has been promoted from purchasing agent to the position of assistant to manager of the Dallas Electric Lighting and Power Company.—R. F. Gale is with the Stone & Webster Company on electrical work in Taunton.—Selskar Gunn is again lecturer in biology at the Iowa State University, and is also State biologist. During the summer he made a trip to England.—C. H. Clapp, who has been instructor in the North Dakota School of Mines, has been East during the month of August.—W. D. B. Motter made a short trip north from Mexico, and spent two weeks in September at Kennebunkport, Me.—W. L. Spalding reports that E. C. Weaver passed through Buffalo on his way to California, where he will work on railroad construction. He said Shorty had some awful alligator yarns and weird accounts of life in the wilds of Florida.—Carl E. Danforth was married on August 28 to Miss Carrie M. Goodale. They will live in Bangor, Me., where Danforth's business is located.—Joe Daniels has returned from Glace

Bay to continue teaching in the Mining Department of Lehigh University.—B. L. Johnson is with the United States Geological Survey in Wyoming, where the Survey is working up a coal formation.—Lee Faulkner Goldthwaite, midshipman on the United States battleship "Georgia," was killed in performance of duty on July 15 by a powder explosion in a turret of the above ship during target practice. Goldthwaite left the Institute during his Sophomore year, to take an appointment from his home State, Kentucky, to the Naval Academy at Annapolis. He graduated last June, and was on his first cruise when the accident occurred.

1906.

THOMAS L. HINCKLEY, *Sec.*, 745 Osceola Avenue, St. Paul, Minn.
A. T. HEYWOOD, *Rec. Sec.*, Mass. Inst. of Technology, Boston.

It becomes the very joyful duty of the secretaries to announce, as a fitting preface to the usual notices of "comings in and goings out," the marriages of our dearly beloved brethren Hermann C. Henrici and Clarence F. Powell, lately of Courses II. and VI., respectively. The former of these model young men has confessed in a letter, of which an extract may be seen later on, that the prospect of having to spend next winter alone amid the raging blizzards of Kansas was a factor in the happy event in his case, and that on the 19th of January last he did the deed. We have not the particulars in the case of brother Powell, but hope that they will soon be forthcoming. These events are coming to be so popular that they no longer cause the wild excitement that used to accompany their announcement. That is far from saying that we have ceased to feel a most vivid interest in them, however. In the name of their 269 single classmates we wish "the best ever" to Mr. Henrici and Mr. Powell, and sincerely hope that they may both "live long and prosper." Rah for '06!—Some of the faithful may wonder what is the upshot of the change in our organization recorded in the July issue of this REVIEW. As it has been vacation time, no ballots have been as yet

prepared. We hope soon to have them on their way, nevertheless, and urge our classmates to give them careful attention. Men at a distance from dear old Boston can render themselves a pleasure and the 'Stute a service by organizing an '06 branch society, and then letting the world know about it in a decent way. There is not nearly enough advertisement given our school in localities where such notice is most needed,—for example, in the Middle West, where the only Eastern scientific school with a real solid backing is Cornell, whose graduates are not afraid to be seen and heard and whose methods are more in keeping with the customs of that section than are those of M. I. T.'s favorite sons. This is not merely a "filler": it represents the opinions of several of our own graduates who are at present located in the Middle West, and is a real live issue. Don't let us be behind hand in a legitimate campaign of publicity. Hoist the cardinal and gray, and let the other fellows see what a good thing it stands for.—Merely to see what sort of results they would bring, the secretaries sent a few reply-postal cards around to some of the fellows. While there wasn't much space to reply in, we found that what was said generally was to the point, and this method has the advantage of equally dividing the work between the man addressed and the despairing scribe. We print some of the replies. H. C. Henrici: "It's did (see details in letter). I can't say anything for the REVIEW, it speaks for itself. I am looking forward to the next issue with great interest, to see where the boys have all gone to. For from the enormous (?) number of letters I have received they must have vanished or moved to Africa."—E. D. A. Frank (replying categorically): "Nothing is the matter. No, I am not dead." We desire to add to this that we ourselves had the honor of recently visiting the gentleman in his own fastness, Milwaukee, and can confirm both statements. We were "personally conducted" for the greater portion of a day, on foot, over about 'steen dozen square miles of Wisconsin soil at a velocity which would make a Boston street-car sick with envy. Edwin is still with the Allis-Chalmers Company, and has had a varied experience on outside jobs.—C. A. Farwell: "I'm still fat and lazy, although I haven't seen a Tech man for months. I've got a couple of classmates up

the Yellowstone that I am going to see shortly. Great sport out here, hunting prairie chickens on horseback. Am not saying anything about my luck."—G. R. Guernsey: "Farwell is doing detail work in the office on structures for the Trenton Project, Buford, N.D., about 50 miles north-east of here down the Yellowstone. Lincoln was at the Newlon camp for four months as earthwork inspector on the Lower Yellowstone Project, but was recently transferred up here to La Mesa. He is inspecting on a large earth fill. There are four Tech men here now: Mr. Paul, the construction engineer, Morse, Lincoln, and myself. I am inspecting on reinforced concrete."—A. W. Hertz: "My health is good, and I am getting along first-rate as an architectural draftsman. Wilson, '04, is in the same office with me. Saw Jimmie Root a few weeks ago on his way out to Mexico." (Al. is still in Kansas City.)—H. W. Harvey: "Still at the same place. Like it O. K. Am living at 113 Oak Street, Weehawken. Kennedy (II.), is living with me. Not married as yet, but possibly in a year or two."—C. S. Peirce: "Am getting along famously. Wish I could hear more about you fellows,—Bart. and the rest. With the C. & N. W. Railway, as usual, on second track work. Also new 20-mile yard."—Willis Ranney: "Your long (?) letter received, and in reply would state that I am working for the Chicago Great Western Railway on concrete construction. Learning the business from the bottom up."—Strange as it may seem, we find that real interesting letters come somewhat easier than they used to, and some have actually arrived without any warning. We take it as a good sign, and suppose that, now the fellows have got started in life, they are feeling better, and can afford to push the pen in spare hours. May the good work go on. We submit a few samples to prove that we are right. E. M. Eliot writes, among other things: "Have been doing a lot of drafting work here. It was mostly civil engineering. Applied stood me in good stead, and I coached up on Gurley, bought a Kent, a Kidder, and a Thompson's 'Concrete.' Also dug up a Carnegie, so that I was soon able to tackle their jobs. Have been doing most of the mapping, a couple of roof trusses, which took a good deal of time, and considerable miscellaneous steel work. Have been almost

entirely relieved of correction work, which is a good thing. . . . The civil engineering course got one fall out of me on the subject of rivet spacing." Since this was received, Ed has gone to Seattle, Wash., where better opportunities presented themselves. A brief note apprises us of the fact that he is "back laboring in overalls once more, eleven hours a day." Eliot's new address is 554 Harrison Street, Seattle.—W. G. Waldo, who is with the Detroit River Tunnels Company, at Windsor, Ont., says he will never cast aspersions on the Sanitary option again. Of the tunnel work he humorously says:—

At the present stage of the game the Detroit River Tunnel makes the average sewer seem a delightful place to work in. . . . Did you ever, in the course of your adventures, meet with a curious substance that looks like cotton wool and feels like whipped cream, having a compressive strength closely equal to that of a dish of charlotte russe? Perhaps you have, but anyway you ought to come up and see the kind that grows luxuriously throughout the tunnel. The sensation of squeezing a handful can be compared only to that of compressing a handful of large, fat caterpillars beyond the elastic limit. Then there are the dogs. Do you know the definition of the technical term "dog"? Probably not, so let us assume that you are down in the tunnel, with a candle stuck fast to the brim of your hat, and are dodging along among the countless struts, on your way to the shaft and supper. Suddenly, without warning, your toe strikes a concealed hump of soft mud which has oozed in through some crack, and down you go into as choice a mud bath as could be procured at Carlsbad for many sous. You have stepped into a "dog," that's all. . . . Bartlett is in the Windsor field office, where he has a desk, while I am drafting in the main office over the river. Thus it happens that, while we are both working for the tunnel company, neither of us has much to do with the tunnel itself, at least at present. Both of us expect to be put upon outdoor work in the near future.

—C. T. Bartlett has been at Windsor since July, and, to judge from many brief communications, is finding the work very agreeable.—H. C. Henrici has the following interesting news to impart:—

I am buried in the heart of Kansas, at Sabetha in Nehama County. Sabetha is a town of about 2,100, and is strictly a farming community. Bern

and Oneida are the two other towns which, with Sabetha, comprise my district. They are also farming towns, and, indeed, these telephone exchanges are made up of about 60 per cent. rural telephones. My district extends about 25 miles north and south, and about 18 miles "at right angles to it," including in the three towns about 1,000 subscribers. . . . The people are very sociable, and we have enjoyed ourselves very much, notwithstanding the fact that we have gone through three telephone "wars" since I have come here. . . . When I was first sent out, I was here for about a week alone, but the prospect of having to stay alone during a lot of trouble was too much of a proposition, and I returned on the 18th of January, and persuaded my wife to marry me the next evening, although we had already planned a big wedding for some future date. We were married on the 19th at my wife's home, with just a few friends present, and left for Sabetha on the 20th. . . . I heard from Clarence Powell the other day. He is also married, and claims he is having a better time than I am; but I do not think that is possible, even though he is living in Philadelphia. Clarence is still with the Bell Telephone Company in the equipment department. . . . Dean is in the traffic department of the same company, and A. C. Taylor is still with the Gas Company, as service foreman for West Philadelphia. . . . Burt Terrell wrote me some time ago that he had successfully passed the Civil Service exams for Heating and Ventilating, and is now at Washington, living about two doors from the German embassy. I always knew that '06 men would soon be famous. I never hear very much of the boys in the West, for I do not get to Kansas City often enough to talk with those that are there. Alfred Hertz is working for Mr. Charles A. Smith, and, when I saw him last, was engaged on a design for a high-school building being constructed by the Board of Education. . . . Ira Woodbury passed through here twice during the past year, travelling in the capacity of secretary of a large shoe manufacturing concern.

—G. C. Simpson is still with the Eastern Expanded Metal Company, in Boston, and from last accounts all is going well. Simpson reports a fleeting vision of Benham in the Modern Athens, but no particulars. The secretaries verily believe that they would drop dead if an '06 man were to take the trouble actually to hunt them up without his business bringing him that way. "Small Favors Thankfully Received" is still the motto over our respective pigeon-holes for Class Notes.—In reply to S. P. Newton's inquiry in our last issue we

beg to state that Fred Moore is located in Columbus, Ohio, in the accounting department of the Pennsylvania Railroad, Indianapolis Division of P. C. C. & St. L. Railway.—The very latest! Extra—Ex! News has just been received at headquarters that brother Ralph Jackson has set the date for his capitulation. The announcement reads:—

Mr. and Mrs. Foster Meserole Rhodes request the honour of your presence at the marriage of their daughter, Elizabeth Meserole, to Mr. Ralph Templeton Cushman Jackson, on the afternoon of Wednesday the sixteenth of October, at four o'clock. Saint Bartholomew's Church, Brooklyn, New York.

Mr. and Mrs. Jackson will be at home after November 1 at 57 Oak Square Avenue, Brighton, Mass. Well done, Jack! Our official phrases of congratulation are exhausted, so we simply join with the others, and wish Mr. and Mrs. Jackson long life and prosperity.

1907.

ALEXANDER MACOMBER, *Sec.*, 83 Newbury Street, Boston.

I. *On the Part of the Secretary.*—The campaign for keeping track of the newest alumni began with the sending out of the following circular letter:—

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CLASS OF 1907

Now that our class has joined the ranks of Alumni, it becomes the duty of every one of us to keep in touch with the class organization and endeavor to do his share in maintaining Alumni enthusiasm and interest, for the strength of any institution depends on the loyalty of its Alumni. 1907 has always been a loyal class and will keep its record.

The Class Secretary intends to keep in touch with every man,—not only those who have been with us during our entire course, but those who have been connected with the class for shorter periods. This means nearly four hundred men, and it is no small undertaking. To this end all are urged to communicate with their Secretary, advising him of matters of interest in their lives, their business prospects, changes of position, address, etc.

While the Secretary will endeavor to correspond personally with the class, it will be realized that this is impossible to any great degree and the main channel must be through some publi-

cation which all may receive. The *TECHNOLOGY REVIEW* admirably fulfils this requirement, and all are urged to subscribe for it. The subscription is only one dollar a year, and should be sent to the *TECHNOLOGY REVIEW*, 83 Newbury Street, Boston. All Institute affairs are here chronicled, and a list of members of the class will be published in each issue, with their addresses and notes of interest regarding the men.

Do not fail to take this opportunity to keep in touch with your class and Alma Mater. Remember that there are some who are giving their time and energies to this work,—the least that you can do is to give us your support. Do not fail to fill out the attached blank and mail to your Secretary. **DO IT NOW.** Then you won't forget. Accompany it with a few words of your own work and any matters of interest regarding other members of the class. The first class notes, with the news of the fellows and the report of the Class Day Committee, will be published in the October number of the *REVIEW*. Subscribe now.

Please do your share and send the attached blank to your Secretary and show your loyalty to 1907 and your college.

ALEXANDER MACOMBER, *Graduate Secretary*,
83 NEWBURY STREET, BOSTON, MASS.

August, 1907.

Name.....

Address (mailing).....

Business (firm and address).....

Have you subscribed to the *REVIEW*?.....

Fill out the above and return to

ALEXANDER MACOMBER, *Secretary*,
83 NEWBURY STREET, BOSTON.

Your secretary was unable to send out the above letter before, as he did not receive the list of addresses from the Institute until the latter part of August. Inasmuch as these were home addresses, it will take some time to get returns, and so we hope to have more complete news in the January *REVIEW*.

Since our Freshman year there have been 577 persons connected with 1907. The present mailing list of the class consists of the graduates (208) and all who have been connected with us since the Sophomore year, in all 325. On this basis the secretary sent out 325 circular letters. It is hoped the fellows will respond

promptly, and enable us to maintain a strong organization. In this respect men are urged to look up the Technology Clubs and Associations in their particular part of the country. They are everywhere, and addresses are given in the catalogues and in the REVIEW. Look up other Tech men, and develop that *esprit de corps* which is such a strong factor in the success of our institution. Again, our men are scattered all over the country, and must become acquainted with young fellows who are looking for the education the Institute gives. Use your influence to bring them to Tech, and so actively assist in the work for our college.

It is a pleasure to announce that the labors of the Class Day Committee have resulted very favorably. Following is the general report:—

TREASURER'S REPORT.

Spread	\$202.00
Concert	18.00
Alumni Reception	17.80
Class Dinner	350.00
Orchestra	50.00
Class Gift	184.90
Printing and engraving	229.25
Floral decorations	186.75
Miscellaneous expenses	34.80
Deficit on Dance	18.25
Total expenses	<u>\$1,281.75</u>

Receipts.

Received from Class Day assessments and Class Dinner tickets .	\$1,426.00
Total receipts	1,426.00
Total expenses	<u>1,281.75</u>
Balance	\$144.25
Interest77
In treasury	<u>\$145.02</u>

(Signed) E. H. PACKARD, *Treasurer.*

AUDITOR'S REPORT.

We have examined the accounts of the treasurer, as herein given, and find them to be correct.

(Signed.) ALEXANDER MACOMBER, *Chairman*,
 WILLIAM L. WOODWARD,
 HUDSON B. HASTINGS,
 Auditing Committee.

II. *Personal Notes.*—1907 is certainly holding its record as a banner class in some respects. The secretary has received word of five marriages since June. John H. Leavell married Miss Rebecah Doble, of Quincy, Mass., June 10. Several of us were on hand to give our Texan a good send-off, but "Stud" fooled us, as usual. Stud is a very fortunate man. May we all be as much so when the time comes! He and his bride have spent the summer in Europe.—Oscar Starkweather married Miss Margaret L. Mitchell, of Needham, Mass., September 18. The wedding was held in the First Baptist Church of Needham. Several 1907 men were present to witness Stark's downfall. We all of us wish him great happiness. Stark and his bride plan to go West this fall.—P. R. Nichols married Miss Mildred Wood, of Bournedale, Mass., on June 20. Their home will be at 23 Pleasant Street, Stoneham, Mass. The other two Benedicks are Kenneth Moller and K. W. Dyer, who were married in July.

Our class will be well represented on the instructing staff next year, the following men returning as assistants: civil engineering, C. E. Allen, Alvord, J. M. Barker, Cullimore, Conron, Garratt, C. D. Howe, H. B. Hastings; mechanical engineering, R. S. Gardner, C. A. Eaton, J. J. Thomas, Bryant Nichols, Kenneth Moller, W. W. Bigelow; chemistry, C. R. Bragdon, G. F. White, F. B. Shields, H. W. Mahr, O. L. Peabody, W. B. Gonder, R. G. Woodbridge; electrical engineering, R. G. Hudson; naval architecture, A. H. Jansson, H. S. Wonson.

Following are notes concerning those heard from, or of, up to date. All others will have to be reached through their home addresses

which may be found in *Technique* or by application to the secretary. As soon as they are heard from their notes will be published. Bob Albro is with the Metropolitan Water Board at Clinton, Mass.—Charlie Allen has been with the American Bridge Company this summer, but comes back as an assistant.—Laurie Allen is with Horton & Hemenway, builders, and is at Providence, R.I., address 128 Broad Street.—A. B. Arnold is with the American Agricultural Chemical Company, 92 State Street, Boston.—R. C. Ashenden (*ex '07*) is with the Boston & Albany Railroad at Chatham, N.Y.—Bachmann is in the United States Patent Office, address 1116 New York Avenue, N.W., Washington, D.C.—C. F. Baker is with G. H. Ingraham, Architect, address 43 Chestnut Street, Boston.—J. M. Baker is with the Illinois Steel Company, Chicago.—A. F. Bancroft (*ex '07*) is with Warren Brothers, 93 Federal Street, Boston.—Jimmie Barker returns as assistant in Civil Engineering, as does Bigelow.—A. S. Black (*ex '07*) is with Baker, Geer, & Ingalls, 341 Union Street, Lynn, Mass.—J. C. Bradley, is with the Coe Brass Manufacturing Company, 74 Litchfield Street, Torrington, Conn. He writes that he is already at home in their chemical laboratory.—L. C. Brock expects to return as Young Men's Christian Association college secretary, and also to do graduate work in electrical engineering.—Harry Burhans is working for the Burhans & Black Company, Syracuse, N.Y.—A. L. Burwell is experimental chemist with S. M. Bixby & Co., makers of shoe polishes, address 30 7th Avenue, New York City.—J. P. Chadwick is with the Tennessee Copper Company, Copperhill, Polk County, Tenn.—E. L. Chaffee takes up graduate work in Harvard this fall in line for a Ph.D. His engagement is announced to Miss Dora L. Armes, of Lexington, Mass., Mt. Holyoke '06. Chaffee, however, expects to change that name before long. Good luck, old man!—H. R. Chase is with the American Bridge Company, New York City, address 481 Bedford Avenue, Brooklyn, N.Y.—A. O. Christensen is at Calumet, Mich.—Charlie Coffin is with the Board of Water Supply, Jamaica (L.I.), N.Y.—G. A. Crane is at Tucson, Ariz., with the Southern Pacific Railway.—R. H. Crosby is with the Western Electric Company, Chicago, address 75 Park Avenue.—P. T.

Cummings is with James Purdon, architect, 8 Beacon Street, Boston.—Carrol Dean takes up the apprentice course with the Westinghouse Company at Pittsburg.—V. H. Dickson is with Clay Belsley, mechanical engineer, 219 Masonic Temple, Peoria, Ill.—Parker Dodge is with Gifford Wood Company, 729 Warren Street, Hudson, N.Y.—S. J. Eagan writes that he expects to go with the Moran Shipbuilding Company, Seattle, Wash.—Emilio is in Globe, Ariz.—John Evans's address is 1300 South 14th Street, Denver, Colo. John appears to be taking life easy at present.—J. T. Fallon is with Hinchman, Pilot & Tooker, 52 Broadway, New York City.—H. P. Farington, is with Holbrook, Cabot & Rollins Corporation, 6 Beacon Street, Boston.—C. S. Fleming, Jr., is with Proctor & Gamble Company, Ivorydale, Ohio.—F. C. Elder will take graduate work at Tech next year.—F. W. Friend's address is Duxbury, Mass.—R. D. Gale is with the Stone & Webster Engineering Corporation, 174 Milk Street, and is at present in Taunton on concrete construction.—C. W. Gammons will return as a student next year.—W. A. Gates is engineer with the Buffalo Expanded Metal Company, address 57 Johnson Park, Buffalo, N.Y.—G. S. Gould is with the State Board of Health, Boston.—A. E. Green is at Heroult on the Pitt, Shasta County, Cal., with the Noble Electric Steel Company. He is engaged in the new process of the production of steel by electricity.—P. P. Greenwood is with the Western Electric Company, Chicago. He and Crosby are rooming together.—W. I. Griffin comes back to Tech again.—Hapgood is with Stone & Webster, Boston.—J. B. Harlow also returns to Tech this fall.—W. T. Hoover (*ex '07*) is with the State Board of Health, Boston, Mass.—C. M. Hutchins is at Sparrows Point, Md., with the Maryland Steel Company.—J. F. Johnston, Jr., is with the McLoughlin & Walsh Construction Company, Marston Building, Kearny Street, San Francisco.—T. C. Keeling is with Stone & Webster, 84 State Street, Boston.—C. R. Lamont (*ex '07*) returns as a student this fall.—E. G. Lee is with S. Morgan Smith Company, 176 Federal Street, Boston. Lee is on the road to Benedick life, as his engagement was announced, July 15, to Miss Edna M. Grant, of Somerville.—H. C. Libby is with the American Bridge Company,

Pencoyd, Pa., address 101 Rochelle Avenue, Wissahickon, Phila.—Roy Lindsay returns as Dr. Gill's private assistant.—Dan Loomis is at Bath, Me., with the Bath Iron Works.—H. D. Loring is in Cincinnati, Ohio, with the Ferro Concrete Company.—W. S. Lucey is with the Eastman Kodak Company, address 3 Emerson Street, Rochester, N.Y.—H. H. McChesney is with the Oneida Railway Company, Utica, N.Y.—J. M. McMillan is the proud possessor of the following address: Care Veta Colorado Mining and Smelting Company, Minas Nuevas via Parral, Chihuahua, Mexico. That sounds just like Mac.—Macomber is with Stone & Webster, electrical engineers, 84 State Street, Boston.—F. S. MacGregor's address is 78 West Street, Hyde Park, Mass.—Stuart Miller is reducing his weight with the Cincinnati Milling Machine Company. His address is 3447 Evans Place, Cincinnati, Ohio.—H. L. Moody is with the Boston Rubber Shoe Company at Malden, Mass. Harry is assistant master mechanic.—F. W. Morrill is with the Schofield Company, 904 Pennsylvania Building, Philadelphia, Pa. His address is Fort Hunter, N.Y.—E. H. Packard is mechanical engineer with H. M. Plympton & Co., address 62 Winter Street, Norwood, Mass. Pack is the same old boy, and is "waiting for the time."—W. W. Pagon is with the Baltimore Bridge Company, Baltimore, Md.—R. W. Parlin comes back to Tech this fall.—M. H. Pease is with Stone & Webster, Boston, and has just been sent to El Paso, Tex., with the El Paso Street Railway Company.—Allen Pope is with J. W. Danforth Company, Buffalo, N.Y. His address is 1336 Harvard Street, Washington, D.C.—Rambo is with the American Locomotive Company at Providence, address 274 Benefit Street, Providence, R.I.—Karl Richards is with the T. J. Hind Company, concrete, 19 Milk Street, Boston. "Kelly" has been bossing a gang of dagoes this summer.—Franklin Ripley, Jr., is with the Troy Blanket Mills, Troy, N.H.—Don Robbins is with Horton & Hemenway, contractors, 683 Atlantic Avenue, Boston.—D. E. Russ is with the Revere Sugar Refinery, East Cambridge, Mass., where he is in charge of a laboratory he has fitted up himself.—M. W. Sage is with Sage Brothers Company, Boston, address 18 Bradshaw Street, Medford, Mass.—R. E. Sampson expects to go

to Nevada as mining engineer at Marietta, Sodaville County.—B. K. Sharp is with the Bath Iron Works, Bath, Me.—Herbert Spear is with the Burgess Sulphite Fibre Company, Berlin, N.H. He is assistant to the head chemist, and writes that he is getting great experience with the “unexpected happening every day.”—F. C. Stockwell’s address is 59 Arlington Street, South Framingham, Mass.—R. E. Thayer is with the American Locomotive Company, address 309 Benefit Street, Providence, R.I.—E. A. Thornton is with the Southern Pacific Railway at Tucson, Ariz.—W. F. Turnbull is with the New York Central & Hudson River Railway, address Tuckahoe, N.Y., Box 413.—C. V. Turner is at Lawton, W. Va., with the Laurel Creek Electric Company.—Sam Very is with Clinton & Russell, architects, address 518 West 151st Street, New York City.—C. A. Vose is at Marion, Mass.—P. B. Walker is with the Boston Transit Commission, 15 Beacon Street, Boston.—S. D. Wells is with the Green Fuel Economizer Company, 141 Milk Street, Boston.—J. D. Whittemore and Erle Whiting are taking the student course with the General Electric Company. Their address is 618 Chapel Street, Schenectady, N.Y.—L. C. Whittemore is in the engineering department, American Brass Works, Waterbury, Conn.—W. L. Woodward is with C. S. Bradley & Son, 41 Park Row, N.Y., engaged in experimental work in electro-chemistry.

III. *Letters.*—Bob Albro writes:—

. . . I arrived home after the “Pop,” and started to work for the Metropolitan Water Works. I am at the Clinton office, and am getting the practical work which every fellow needs. I may be in Boston late in the winter, and hope to see you. As I owe the “handsome man” a letter, I give it to him now.

—A few lines from the handsome man:—

. . . Mighty glad to see the old class is going to move after all. I have been with Horton & Hemenway since June 10, and have been working on a big car barn in Providence, R.I. I feel as if I were pretty well fixed, and like

the work, but how a man is going to get hitched on the money he earns by the sweat of his brow is beyond my comprehension. If you happen to get next to any get-rich-quick schemes, put me wise, for, if all goes well, next year is going to see me starting out on a life sentence. . . . LAWRIE ALLEN.

—Charlie Allen writes:—

Nothing of great bearing on my future life, outside of business, has happened as yet. But you know that it's in the blood of old '07, so look out for surprises.

—R. H. Crosby writes:—

Greenwood and I have arrived in Chicago July 6, and began the toilsome life for the Western Electric Company. Greenwood is taking the power apparatus course at Hawthorne, while I am trying to spoil telephone switchboards at Clinton Street.

—From Charlie Coffin:—

. . . I have been down here at Jamaica, Long Island, with the New York Board of Water Supply since August 3. I have decided to discontinue my relations with the Tech Show, and incidentally Tech, and try my luck at the legitimate.

—From Harry Moody:—

I went to work for an oil concern, but very shortly put them on the bum, for they failed after I had been with them two weeks. Then I came here with the Boston Rubber Shoe Company, as assistant master mechanic. I am the fourth Tech man on the place, the superintendents of both factories and the chemist being the others.

—Bill Woodward writes:—

. . . I am with Charles S. Bradley & Son, of 41 Park Row, New York City, on some experimental electro-chemical work of a private nature. We are located at Bayonne, N.J., a very unattractive breeding-place for the famous Jersey mosquito.

The fellows will be glad to hear from Jimmie Walsh (*ex* '07), now a cadet at West Point. He writes:—

Received your note, and was mighty glad to hear from you. I have some pictures of the boys up here, and they serve to remind me of the good old days (Wednesdays) when we played at soldiering in the old Armory. It's quite a lot different up here, as you can imagine. About myself I can only say that "Uncle Sam" is certainly doing the right thing by me, and I am doing my best to show I appreciate it.

—R. G. Woodbridge writes:—

. . . I have been enjoying the longest and best loaf this summer. Spent eight weeks on a trip to the Middle West, spending most of my time and money in Indianapolis and Chicago. Four years at Tech proved insufficient for me, so I am coming back on a special train as research assistant in organic chemistry.